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**BASIS OF COORDINATES (NAD83)**

THE BASIS OF COORDINATES FOR THIS SURVEY IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) CALIFORNIA STATE PLANE COORDINATE SYSTEM OF 1983 (CALSTAD) WHICH IS BASED LOCALLY UPON THE FOLLOWING CONTROL POINTS PER RECORD FOR SURVEY 17274:

STATION	NORTHING	EASTING	DESCRIPTION
105	1989466.124	6241021.960	2.5' BENCH MARK ON WALK NE COR CANNON BLVD
108	1989667.594	6248033.709	2.5' BENCH MARK ON WALK NE COR CANNON BLVD

GRID BEARING BETWEEN #105 AND #108 = S 68°14'31" E.

**VERTICAL CONTROL (NGVD29)**

ELEVATIONS SHOWN HEREON ARE IN TERMS OF THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) BASED LOCALLY UPON THE FOLLOWING CITY OF CARLSBAD BENCHMARK:

BENCHMARK	ELEVATION
CONTROL POINT 105 ROS 17271	45.41'

**SUPPLEMENTAL CONTROL**

AS ESTABLISHED FOR THIS PROJECT  
 NOTE: SUPPLEMENTAL CONTROL POINTS WERE ESTABLISHED HORIZONTALLY BY RTK GPS SURVEY WITH REDUNDANCY.

PT#	NORTHING	EASTING	ELEV.	DESCRIPTION
2004	1880852.55	62544830.24	463.47	fd l&d ls2813
2005	1880349.05	62544729.32	452.61	fd l&d ls2813

**SOURCE OF TOPOGRAPHY:**

TOPOGRAPHY SHOWN ON THESE PLANS WAS GENERATED BY FIELD SURVEY METHODS FROM INFORMATION GATHERED ON 01/06/2021 BY AGUIRRE & ASSOCIATES. TOPOGRAPHY SHOWN HEREON CONFORMS TO NATIONAL MAP ACCURACY STANDARDS.

**PROJECT LOCATION:**

THIS PROJECT IS LOCATED ALONG EL CAMINO REAL FROM SUNNY CREEK ROAD TO JACKSPAR DRIVE IN THE CITY OF CARLSBAD.

**IMPERVIOUS AREA:**

TOTAL DISTURBED AREA = 2.21 ACRES  
 TOTAL EXISTING IMPERVIOUS AREA = 2.59 ACRES  
 TOTAL REPLACED IMPERVIOUS AREA = 0.21 ACRES  
 TOTAL PROPOSED IMPERVIOUS AREA (NEW AND EXISTING) = 3.19 ACRES

**STORM WATER BMP CATEGORY:**

EXEMPT FROM HYDROMODIFICATION (SEE FINAL GREEN STREETS STORM WATER QUALITY TECHNICAL MEMO FOR DOCUMENTATION).

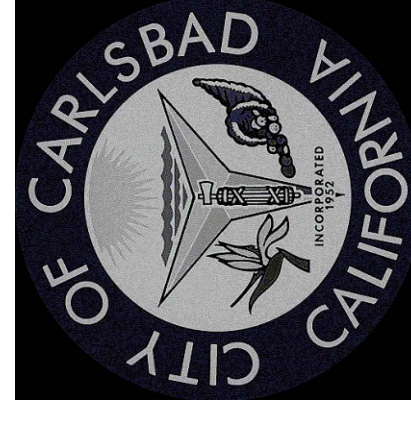
**WORK TO BE DONE:**

- THE IMPROVEMENT WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING DOCUMENTS, CURRENT AT THE TIME OF CONSTRUCTION, AS DIRECTED BY THE CITY ENGINEER.
- CARLSBAD MUNICIPAL CODE
- CITY OF CARLSBAD ENGINEERING STANDARDS
- THIS SET OF PLANS
- RESOLUTION NO. \_\_\_\_\_ DATED \_\_\_\_\_
- THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK), SOILS REPORT, AND RECOMMENDATIONS BY ALLIED GEOTECHNICAL ENGINEERS, INC. DATED 07/16/2021
- THE SAN DIEGO AREA REGIONAL STANDARD DRAWINGS AND AS MAY BE MODIFIED BY THE CITY OF CARLSBAD STANDARDS.
- STORM WATER POLLUTION PREVENTION PLAN: TO BE PREPARED BY OTHERS. DATED \_\_\_\_\_ W/D NO. \_\_\_\_\_
- FINAL GREEN STREETS STORM WATER QUALITY TECHNICAL MEMO PREPARED BY DOKKEN ENGINEERING DATED 11/17/2021
- CALIFORNIA STORM WATER WATER QUALITY ASSOCIATION BMP CONSTRUCTION HANDBOOK, CITY OF CARLSBAD BMP DESIGN MANUAL, AND CALTRANS CONSTRUCTION SITE BMP MANUAL.

# EL CAMINO REAL ROADWAY IMPROVEMENT PLANS

## FROM SUNNY CREEK ROAD TO JACKSPAR DRIVE

### PROJECT NO. 6094



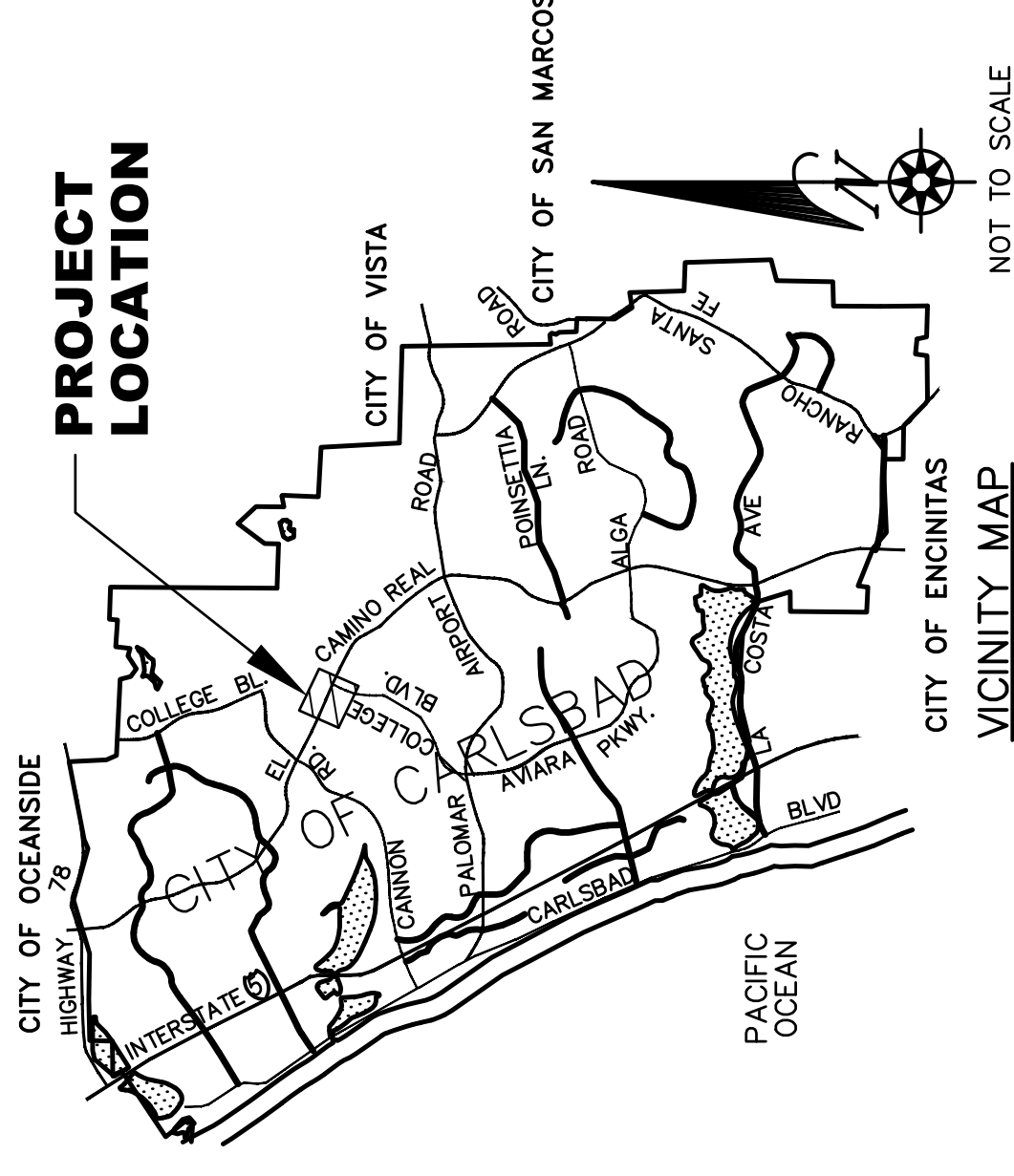
## CITY OF CARLSBAD

### CARLSBAD, CALIFORNIA

**CITY COUNCIL**

- KEITH BLACKBURN - MAYOR
- PRIYA BHAT-PATEL - MAYOR PRO TEM
- MELANIE BURKHOLDER - COUNCIL MEMBER
- CAROLYN LUNA - COUNCIL MEMBER
- TERESA ACOSTA - COUNCIL MEMBER

SCOTT CHADWICK - CITY MANAGER



**LEGEND:**

ITEM	SYMBOL
Exist RIGHT-OF-WAY.....	---
RIGHT-OF-WAY.....	---
CENTERLINE.....	10
TCE.....	---
SAWCUT.....	---
DAYLIGHT.....	---
AC ON AB.....	---
BIOFILTRATION BMP.....	---
Conc PAVEMENT.....	---
COLD MILL AC AND PLACE AC.....	---
FEMA SPECIAL FLOOD HAZARD AREA ZONE AE.....	---
PROPOSED RETAINING WALL.....	---
PROPOSED CURB AND GUTTER.....	---
PROPOSED UNDERDRAIN.....	---
PROPOSED STORM DRAIN.....	---
CURB INLET TYPE B.....	---
CURB INLET TYPE B-2.....	---
STORM DRAIN CLEANOUT.....	---
MODIFIED CURB OUTLET.....	---
UNDERDRAIN CLEANOUT (SIZE/TYPE NOTED).....	---
HEADWALL TYPE-A.....	---
Exist ELECTRIC.....	---
Exist TELEPHONE.....	---
Exist T.V.....	---
Exist STORM DRAIN.....	---
Exist WATER.....	---
Exist ABANDONED WATER.....	---
Exist SANITARY SEWER.....	---
Exist RECYCLED WATER.....	---
Exist PETROLEUM.....	---
Exist CURB AND GUTTER.....	---
Exist CURB.....	---

**ABBREVIATIONS:**

AB	AGGREGATE BASE
ABS	ACRYLONITRILE BUTADIENE STYRENE
AC	ASPHALT CONCRETE
APN	ACCESS PARCEL NUMBER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
BE	BEGIN HORIZONTAL CURVE
BE	BOTTOM OF ENCASEMENT
Beg	BEGIN
BMP	BEST MANAGEMENT PRACTICE
BVC	BEGIN VERTICAL CURVE
CCMD	CITY OF CARLSBAD WASTEWATER DIVISION
CFS	CUBIC FEET PER SECOND
CL	CHAIN LINK
CL	CARLSBAD MUNICIPAL WATER DISTRICT
CCMD	CONCRETE
CTSP	CALTRANS STANDARD PLAN
DIP	DUCTILE IRON PIPE
DIST	DISTANCE
DWY	DRIVEWAY
Elev	ELEVATION
EC	END HORIZONTAL CURVE
Elev	ELEVATION
Env	ENVIRONMENTALLY SENSITIVE AREA
EVC	END VERTICAL CURVE
Exist	EXISTING
FG	FINISHED GRADE
FL	FLOW LINE
FPS	FEET PER SECOND
GALV	GALVANIZED
GB	GRADE BREAK

Gtr	GUTTER
HP	HINGE POINT
IE	INVERT ELEVATION
KM	KINDER MORGAN ENERGY PARTNERS LP.
KSI	KILOPOUNDS PER SQUARE INCH
KS	LEAK FEET
LT	LAYOUT LINE
LN	LINE
LOL	LAYOUT LINE
MAT	MATERIAL
MAX	MAXIMUM
MIL	MILLIMETER
MIN	MINIMUM
MOD	MODIFIED
NGVD29	NORTH AMERICAN DATUM OF 1929
No.	NATIONAL GEODETIC VERTICAL DATUM OF 1929
O.C.	ON CENTER
OG	ORIGINAL GROUND
PE	POLYETHYLENE
PG	PERFORMANCE GRADE
PIP	PROTECT IN PLACE
POT	POINT OF TANGENT
PROP	PROPOSED
PVC	POLYVINYL CHLORIDE
Pvmt	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
Rd	ROAD
Ret	RETAINING
RPM	REINFORCED POLYMER MORTAR

**"AS BUILT"**

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

SHEET	CITY OF CARLSBAD	SHEETS
1	TRANSPORTATION DEPARTMENT	43

TITLE SHEET FOR  
**EL CAMINO REAL ROADWAY IMPROVEMENTS**  
 FROM SUNNY CREEK RD TO JACKSPAR DR

APPROVED: *Mark Tarrall* HOSSSEIN, A/IDEH

ENGINEERING MANAGER RCE 75891 EXPIRES 6/30/24 DATE

DWN BY: \_\_\_\_\_ CP \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. \_\_\_\_\_  
 CHKD BY: \_\_\_\_\_ DATE \_\_\_\_\_  
 REVID BY: \_\_\_\_\_ DATE \_\_\_\_\_

811  
 CALL 2 FULL WORKING DAYS BEFORE YOU DIG

MARK TARRALL  
 No. 671953  
 Exp. 12/31/25  
 CIVIL











# EL CAMINO REAL ROADWAY IMPROVEMENT PLANS

**"AS BUILT"**

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

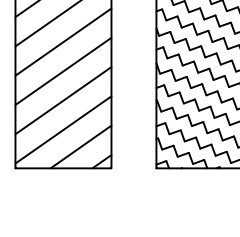
SHEET 4	CITY OF CARLSBAD TRANSPORTATION DEPARTMENT	SHEETS 43

DEMOLITION PLANS FOR  
**EL CAMINO REAL  
ROADWAY IMPROVEMENTS**  
FROM SUNNY CREEK RD TO JACKSPAR DR

APPROVED: \_\_\_\_\_  
HOUSSEIN AJIDEH  
7/19/2024

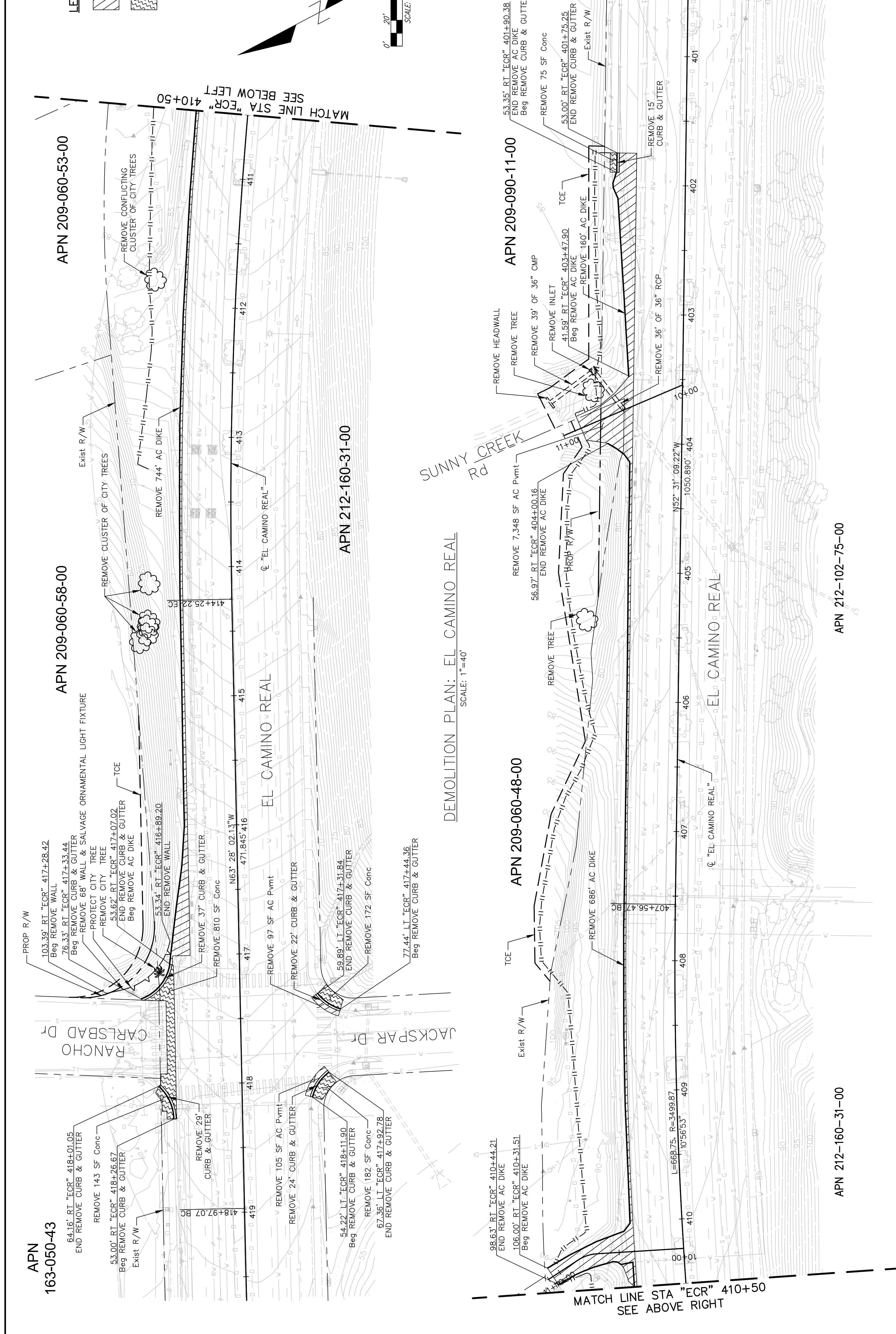
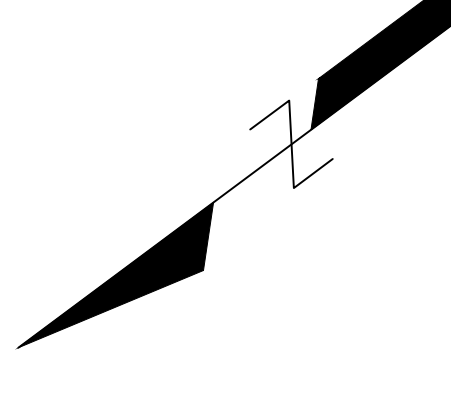
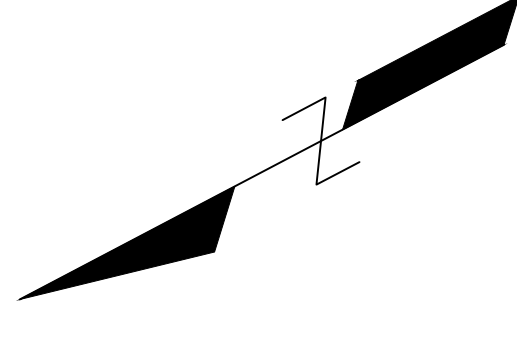
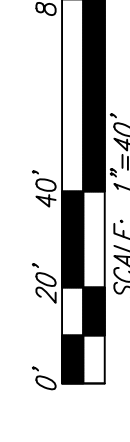
ENGINEERING MANAGER RCE 75991	EXPIRES 6/30/24	DATE
DWN BY: CP	PROJECT NO. 6094	DRAWING NO. DWG 529-1
CHKD BY: AN		
RVID BY: MT		

**LEGEND:**



AC PAVT REMOVAL

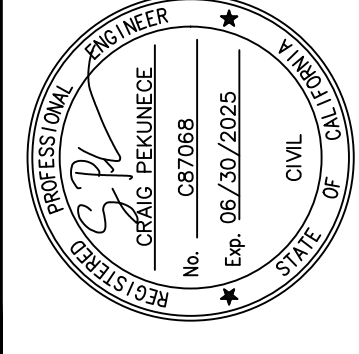
Conc REMOVAL



DEMOLITION PLAN: EL CAMINO REAL  
SCALE: 1"=40'

DEMOLITION PLAN: EL CAMINO REAL  
SCALE: 1"=40'

ENGINEER OF WORK	REVISION DESCRIPTION	DATE	INITIAL	OTHER APPROVAL



**DIGART**  
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CALL 2 FULL WORKING DAYS BEFORE YOU DIG

**DE DOKKEN ENGINEERING**  
1548 PRADER ROAD  
SAN TIBURCIO, CA 94068  
(650) 944-8877

DocuSign Envelope ID: 2187517F-7A1E-4429-822A-52082EDF4282



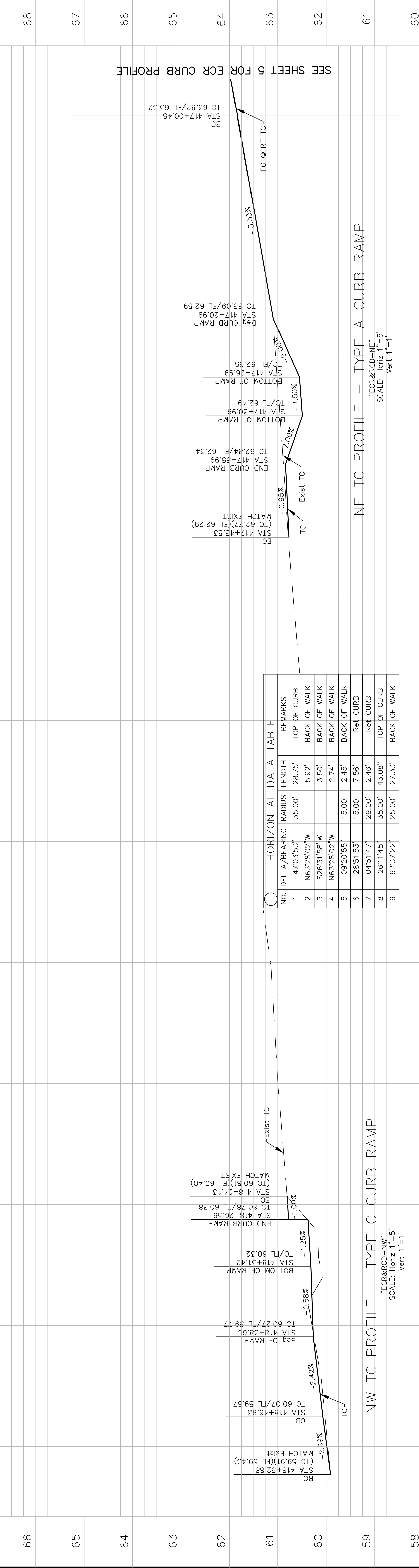




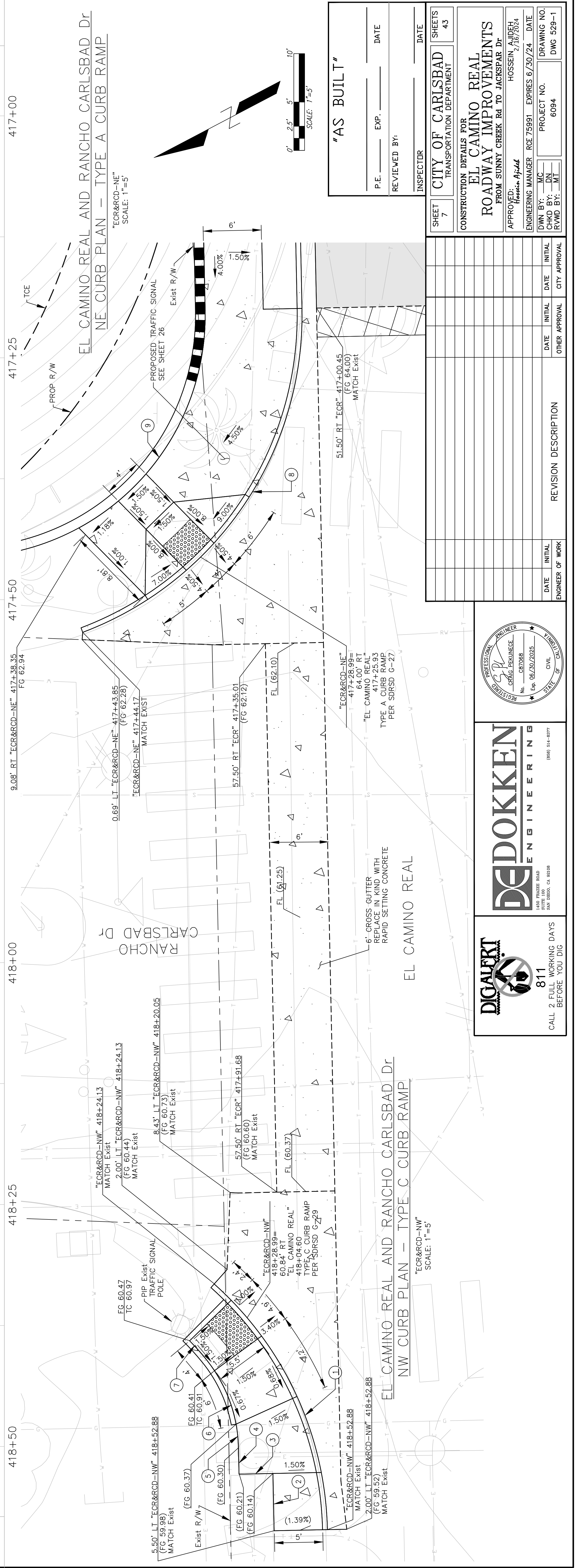




EL CAMINO REAL ROADWAY IMPROVEMENT PLANS



HORIZONTAL DATA TABLE				
NO.	DELTA/BEARING	RADIUS	LENGTH	REMARKS
1	47°03'53"	35.00'	28.75'	TOP OF CURB
2	N63°28'02"W	-	5.92'	BACK OF WALK
3	S26°31'58"W	-	3.50'	BACK OF WALK
4	N63°28'02"W	-	2.74'	BACK OF WALK
5	09°20'55"	15.00'	2.45'	BACK OF WALK
6	28°51'53"	15.00'	7.56'	Ret CURB
7	04°51'47"	29.00'	2.46'	Ret CURB
8	26°11'45"	35.00'	43.08"	TOP OF CURB
9	62°37'22"	25.00'	27.33'	BACK OF WALK



**"AS BUILT"**

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

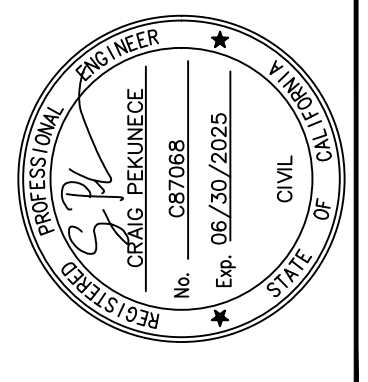
CITY OF CARLSBAD  
TRANSPORTATION DEPARTMENT

SHEET 7 SHEETS 43

CONSTRUCTION DETAILS FOR  
**EL CAMINO REAL ROADWAY IMPROVEMENTS**  
FROM SUNNY CREEK Rd TO JACKSPAR Dr

APPROVED: *Harris Ajzad* HOSSEIN AJDEH 2/16/2024  
ENGINEERING MANAGER R/E 75991 EXPIRES 6/30/24 DATE

DWN BY: MC PROJECT NO. 6094 DRAWING NO. DWG 529-1  
CHKD BY: DN  
RVID BY: MT



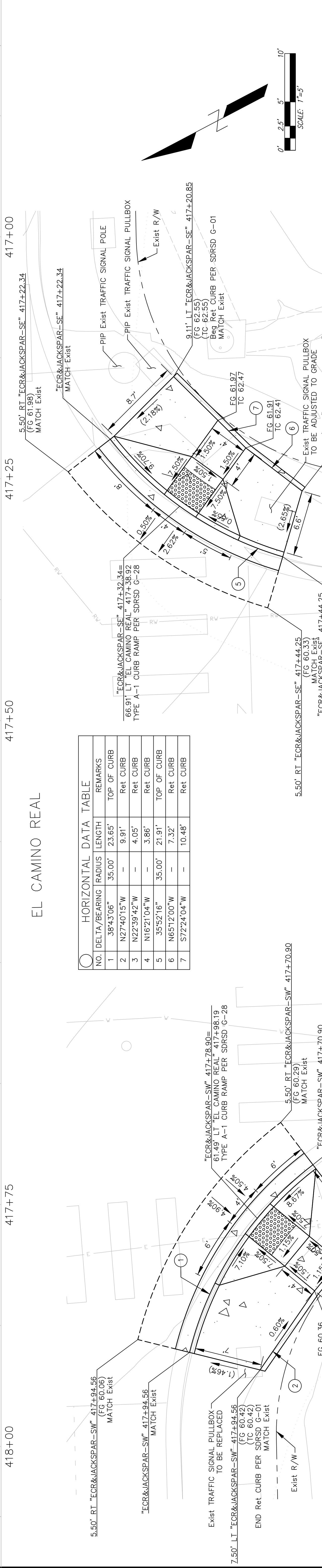
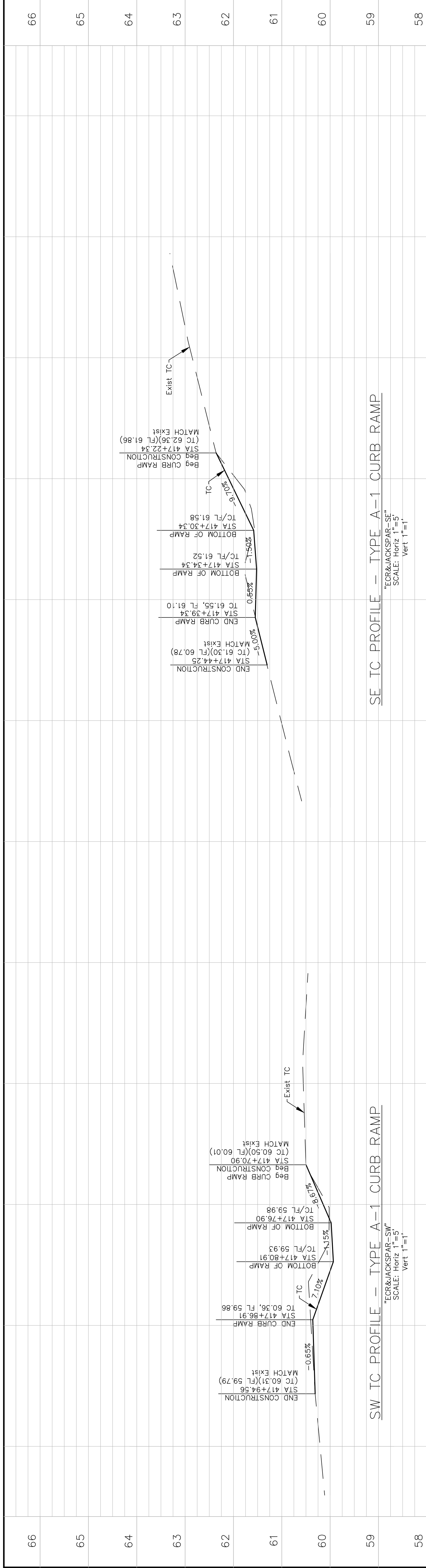
**DIGART**

**DEPOKKEN ENGINEERING**

1848 PALMER ROAD  
SUITE 100  
SAN DIEGO, CA 92108  
(619) 614-8977

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NO.	DELTA/BEARING	RADIUS	LENGTH	REMARKS
1	38°43'06"	35.00'	23.65'	TOP OF CURB
2	N27°40'15"W	-	9.91'	Ret CURB
3	N22°39'42"W	-	4.05'	Ret CURB
4	N16°21'04"W	-	3.86'	Ret CURB
5	S3°52'16"	35.00'	21.91'	TOP OF CURB
6	N65°12'00"W	-	7.32'	Ret CURB
7	S72°24'04"W	-	10.48'	Ret CURB

**"AS BUILT"**

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

SHEET 8 CITY OF CARLSBAD TRANSPORTATION DEPARTMENT SHEETS 43

CONSTRUCTION DETAILS FOR  
**EL CAMINO REAL ROADWAY IMPROVEMENTS**  
 FROM SUNNY CREEK RD TO JACKSPAR DR

APPROVED: *Hanna Ajala* HOUSSEIN AJUDEH 2/16/2024  
 ENGINEERING MANAGER RCE 75991 EXPIRES 6/30/24 DATE

DWN BY: \_\_\_\_\_ CP \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. DWG 529-1  
 CHKD BY: \_\_\_\_\_ DATE \_\_\_\_\_  
 REVID BY: \_\_\_\_\_

ENGINEER OF WORK	REVISION DESCRIPTION	DATE	INITIAL	OTHER APPROVAL	DATE	INITIAL	CITY APPROVAL

EL CAMINO REAL AND JACKSPAR DR  
 SE CURB PLAN - TYPE A-1 CURB RAMP  
 SCALE: 1"=5'

EL CAMINO REAL AND JACKSPAR DR  
 SE CURB PLAN - TYPE A-1 CURB RAMP  
 SCALE: 1"=5'

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 811  
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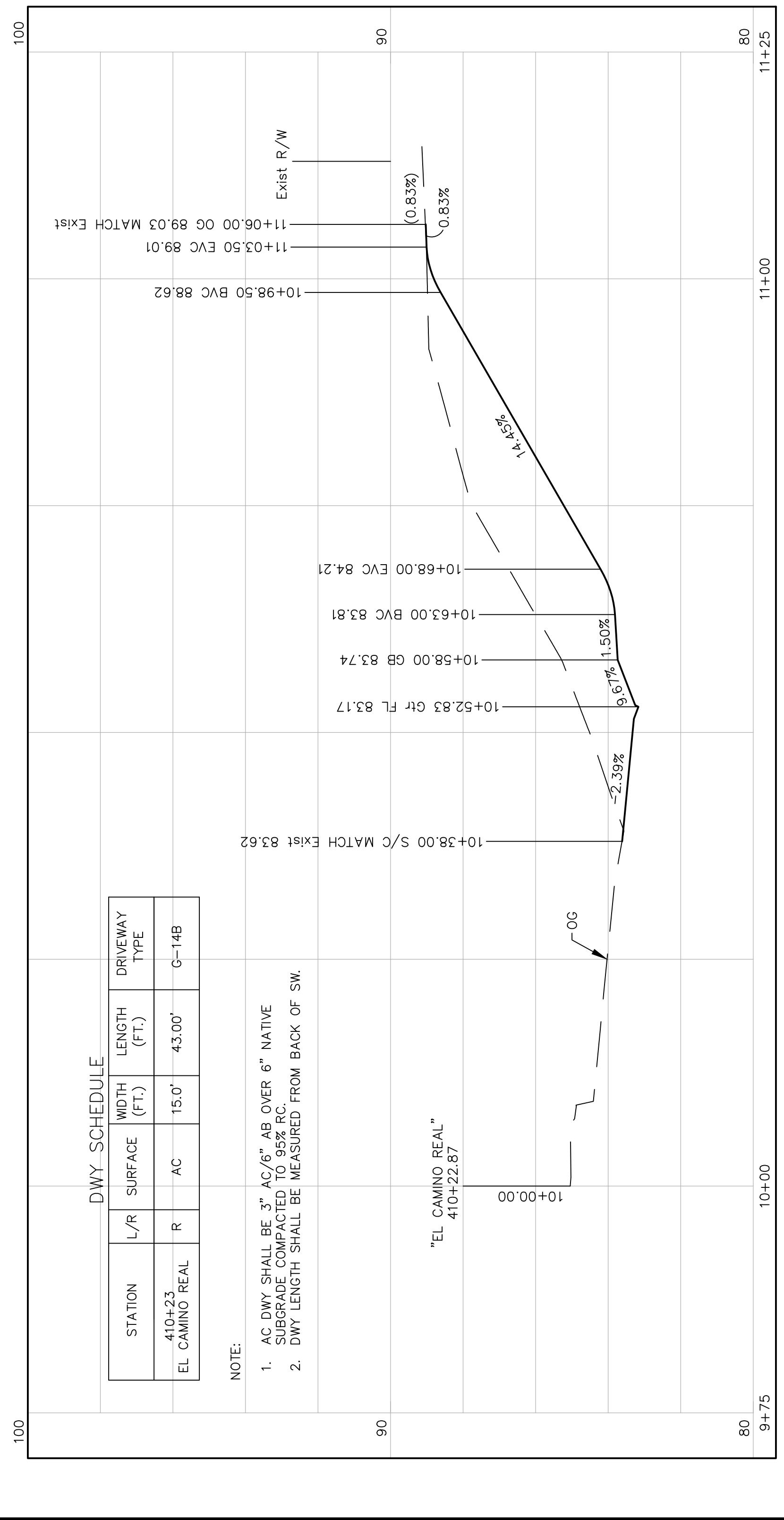
**DE DOKKEN ENGINEERING**  
 1540 PRADER ROAD  
 SUITE 100  
 SAN DIEGO, CA 92108  
 (619) 514-6877

EL CAMINO REAL AND JACKSPAR DR  
 SW CURB PLAN - TYPE A-1 CURB RAMP  
 SCALE: 1"=5'





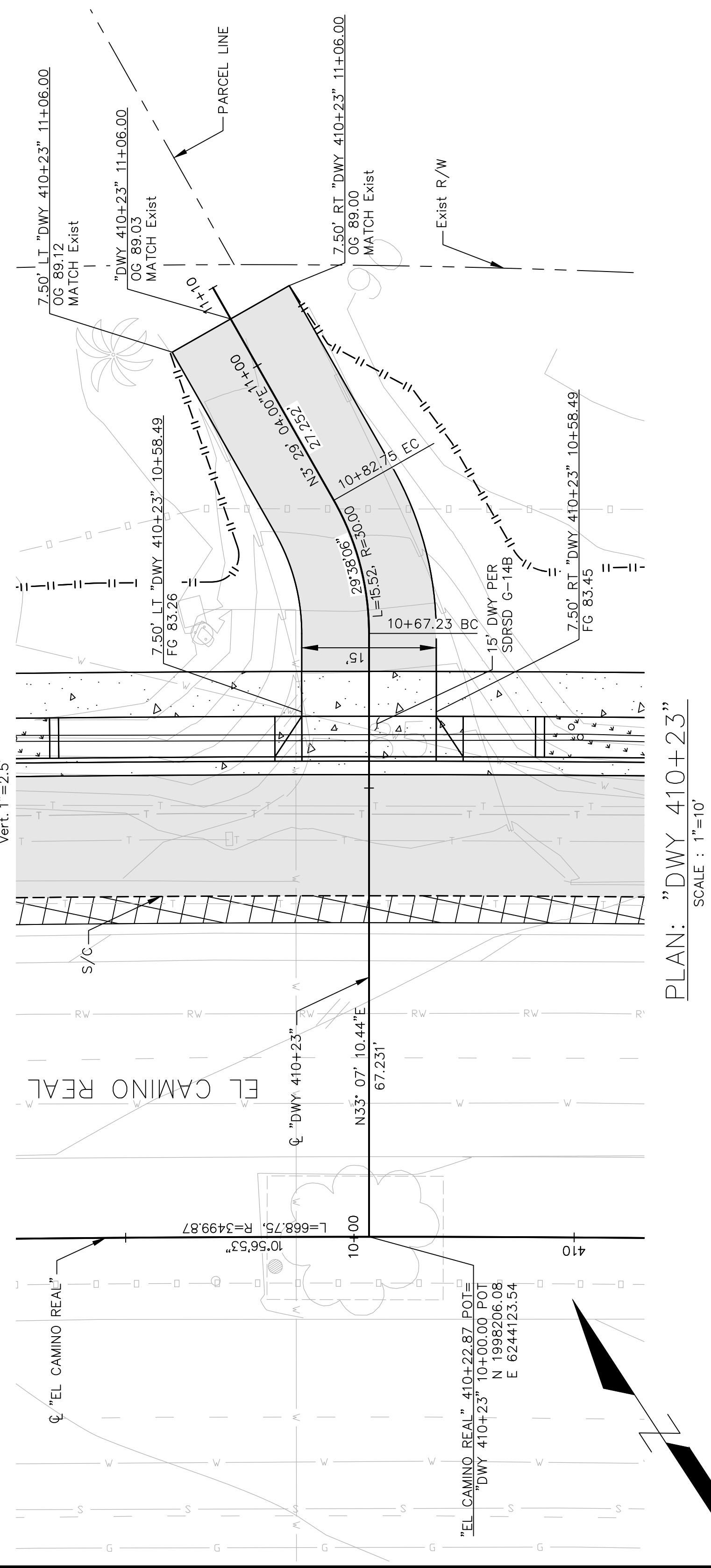




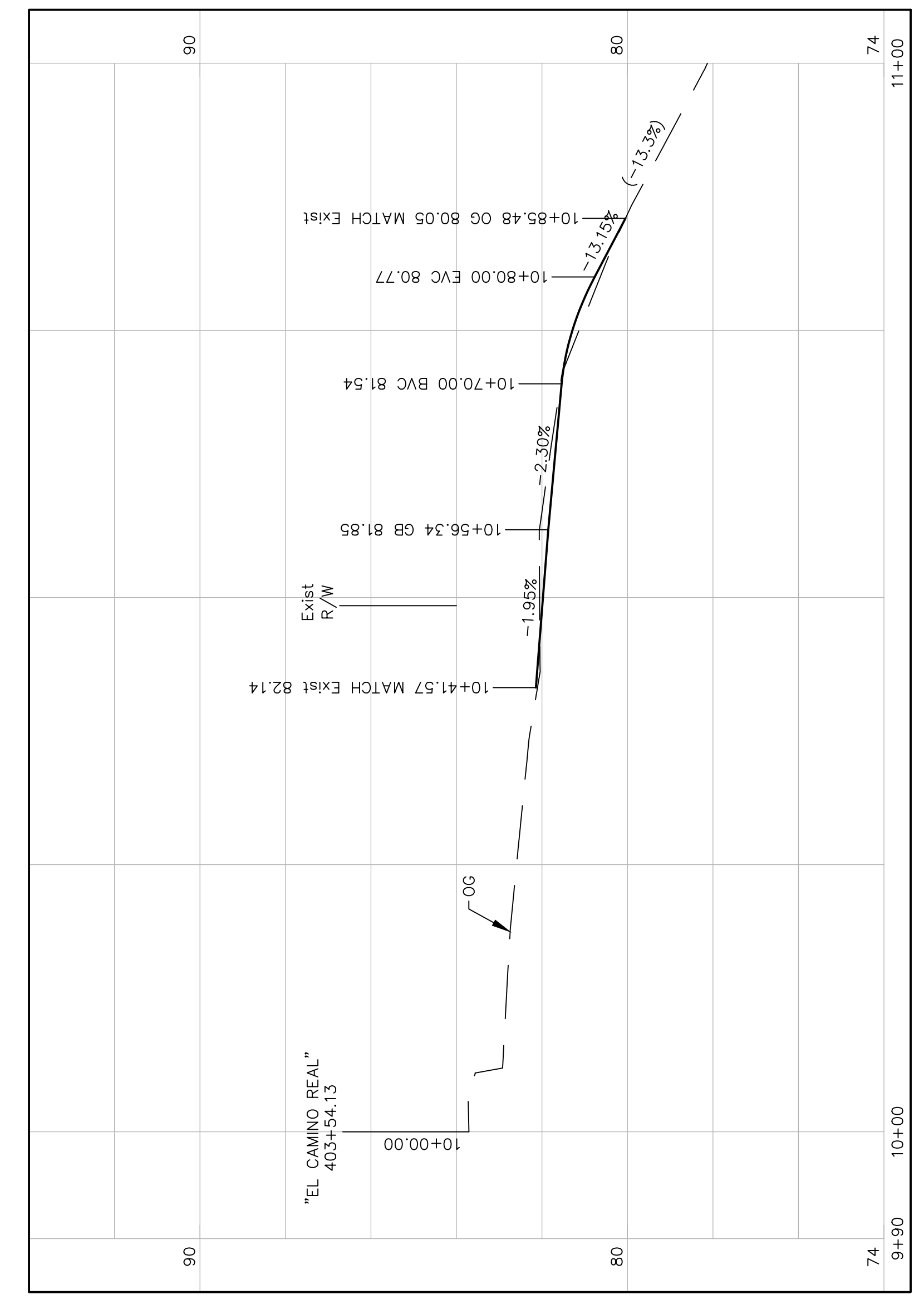
DWY SCHEDULE			
STATION	L/R SURFACE	WIDTH (FT.)	DRIVEWAY TYPE
410+23	R	15.0'	G-14B
EL CAMINO REAL	R	15.0'	G-14B

NOTE:  
 1. AC DWY SHALL BE 3" AC/6" AB OVER 6" NATIVE SUBGRADE COMPACTED TO 95% RC.  
 2. DWY LENGTH SHALL BE MEASURED FROM BACK OF SW.

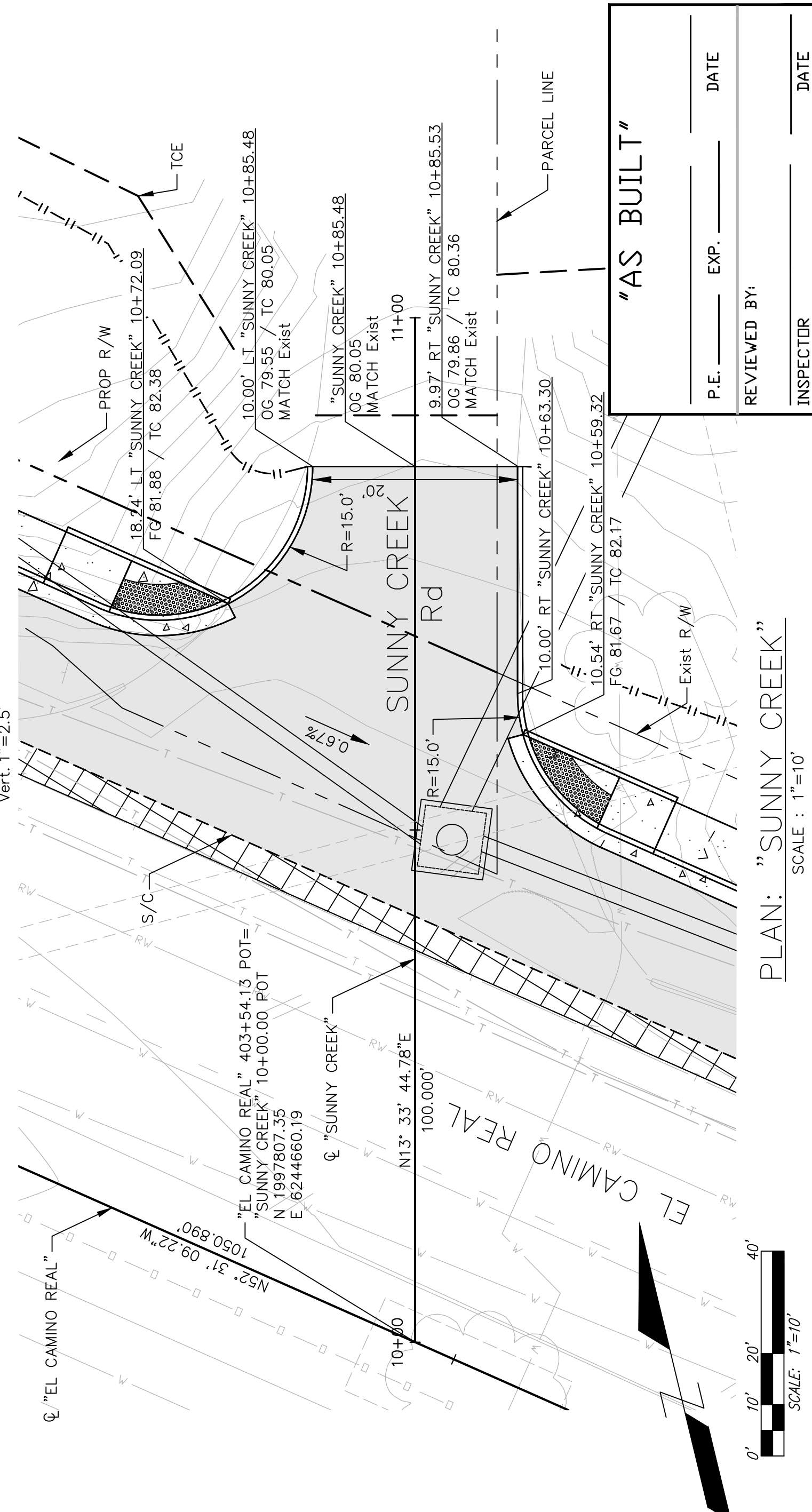
PROFILE: "DWY 410+23"  
 SCALE: Horiz. 1"=10'  
 Vert. 1"=2.5'



PLAN: "DWY 410+23"  
 SCALE: 1"=10'



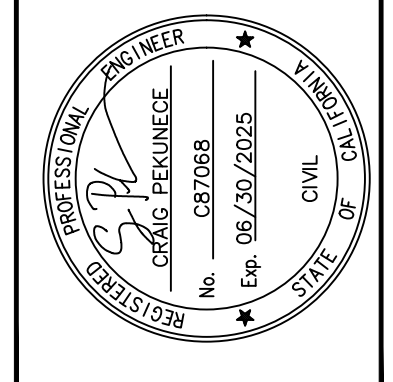
PROFILE: "SUNNY CREEK"  
 SCALE: Horiz. 1"=10'  
 Vert. 1"=2.5'



PLAN: "SUNNY CREEK"  
 SCALE: 1"=10'

SHEET 10	CITY OF CARLSBAD TRANSPORTATION DEPARTMENT	SHEETS 43
CONSTRUCTION DETAILS FOR EL CAMINO REAL ROADWAY IMPROVEMENTS FROM SUNNY CREEK RD TO JACKSPAR DR		
APPROVED: <i>Hossein Ajideh</i>	HOSSEIN AJIDEH	DATE 7/16/2024
ENGINEERING MANAGER RCE 75991	EXPIRES 6/30/24	DATE
DWN BY: CP	CHKD BY: DN	DRAWING NO. DWG 529-1
REV'D BY: MT	PROJECT NO. 6094	DWG 529-1
INSPECTOR	DATE	
REVIEWED BY:	P.E.	EXP.
DATE		

ENGINEER OF WORK	REVISION DESCRIPTION	DATE	INITIAL	OTHER APPROVAL	DATE	INITIAL	QTY APPROVAL



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 SUITE 100  
 SAN DIEGO, CA 92108  
 (619) 514-4877









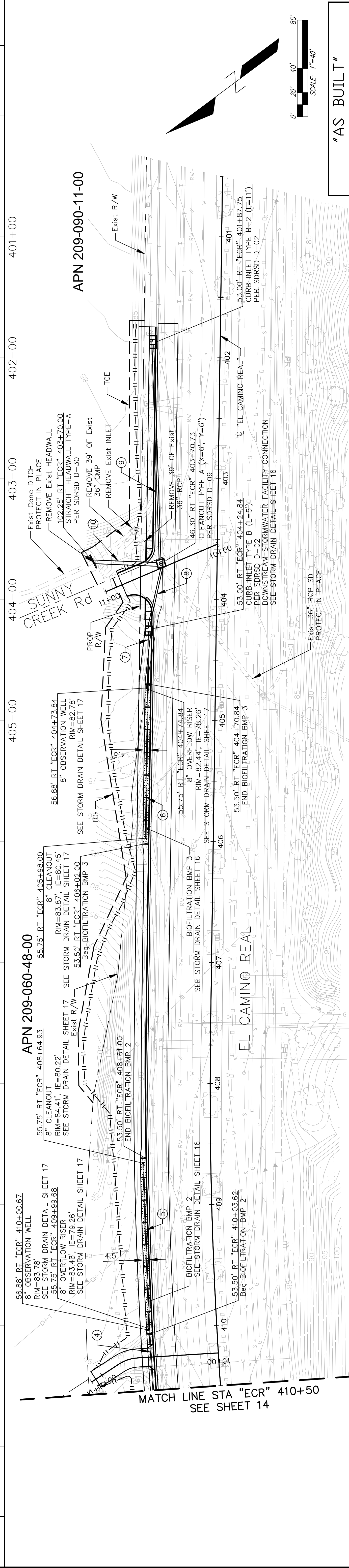
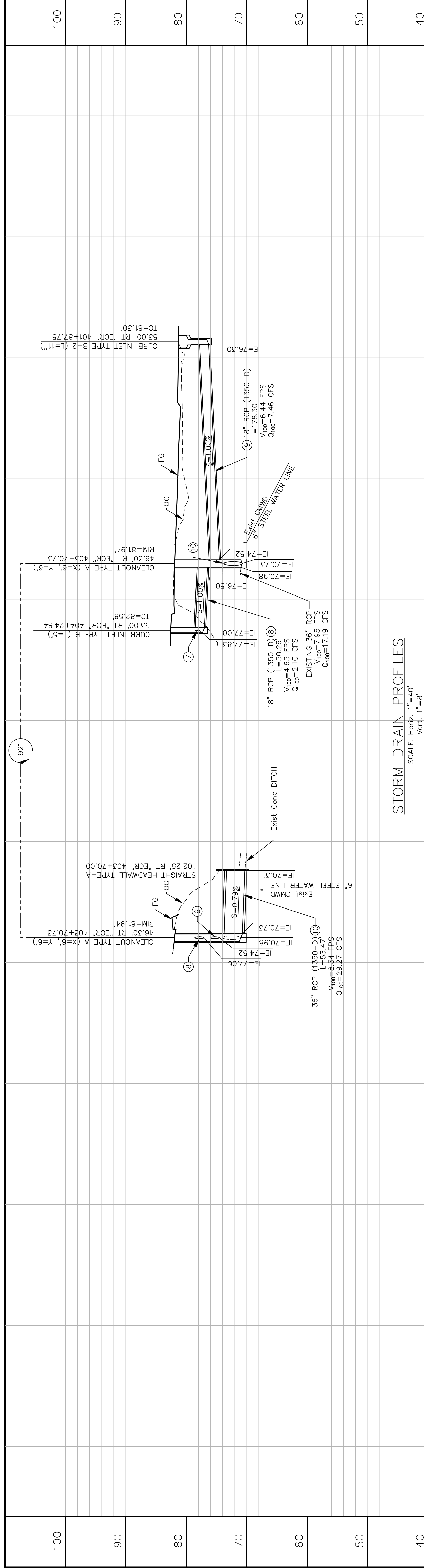












**"AS BUILT"**

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

CITY OF CARLSBAD  
TRANSPORTATION DEPARTMENT

SHEET 15 SHEETS 43

STORM DRAIN PLANS AND PROFILES FOR  
**EL CAMINO REAL ROADWAY IMPROVEMENTS**  
FROM SUNNY CREEK RD TO JACKSPAR DR

APPROVED: *Hossein Ajalati* HOUSSEIN AJALATI  
ENGINEERING MANAGER RCE 75991 EXPIRES 6/30/24 DATE 2/16/2024

DWN BY: SM  
CHKD BY: DW  
RVID BY: PDW

PROJECT NO. 6094 DRAWING NO. DWG 529-1

ENGINEER OF WORK	REVISION DESCRIPTION	DATE	INITIAL	DATE	INITIAL	OTHER APPROVAL	DATE	INITIAL	CITY APPROVAL

SCALE: 1"=40'

APN 212-102-75-00

STORM DRAIN PLAN: EL CAMINO REAL

SCALE: 1"=40'

**DIGART ENGINEERING**  
1545 PALMER ROAD  
SAN DIEGO, CA 92108  
(619) 514-8877

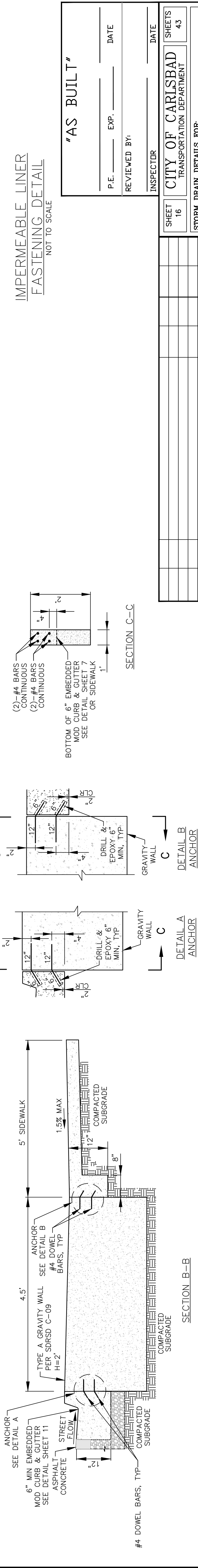
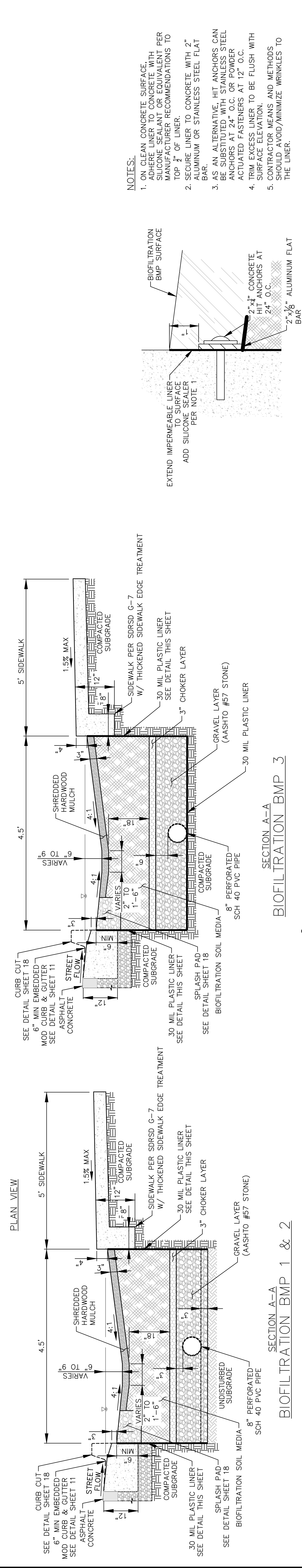
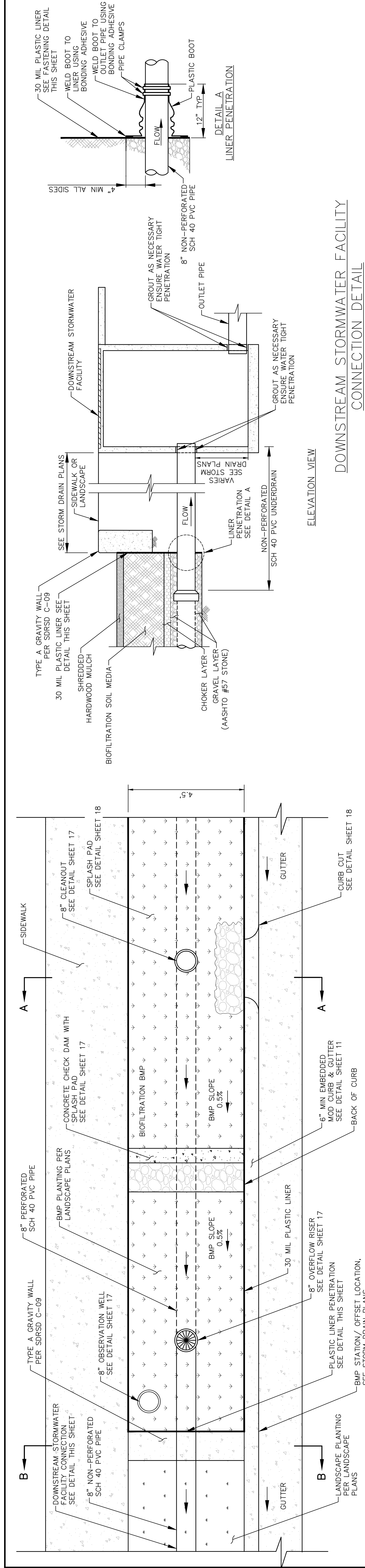
**811**  
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REGISTERED PROFESSIONAL ENGINEER  
DANIEL J. JOHNSON  
No. 52187  
Exp. 12/31/24  
STATE OF CALIF.

NO.	BEARING	RADIUS	LENGTH	REMARKS
4	S57°00'35"E	-	62.50'	8" NON-PERFORATED PVC
5	S55°23'52"E	-	136.22'	8" PERFORATED PVC
6	S52°31'09"E	-	122.50'	8" PERFORATED PVC
7	S52°19'10"E	-	47.67'	8" NON-PERFORATED PVC
8	S40°54'29"E	-	50.26'	18" RCP
9	S55°14'02"E	-	178.30'	18" RCP
10	N33°12'45"E	-	53.47'	36" RCP

- NOTES:**
- PROVIDE STENCILING OR LABELING INDICATING "NO DUMPING ONLY RAIN IN THE DRAIN" AT PROPOSED CURB INLETS.
  - BIOFILTRATION BMP CONFINED BY TYPE A GRAVITY WALL, EXPOSED TO CURB AND EMBEDDED MOD CURB & GR. SEE IMPROVEMENT PLAN SHEETS.
  - FOR 8" CLEANOUT, 24"x24" CLEANOUT, 8" OBSERVATION WELL, 8" OVERFLOW RISER, MODIFIED CURB OUTLET, AND BIOFILTRATION BMP, SEE STORM DRAIN DETAIL SHEETS.
  - CURB INLET STATION/OFFSET TAKEN AT CENTER OF STRUCTURE AT TOP OF CURB.
  - HEADWALL STATION/OFFSET TAKEN AT CENTER OF STRUCTURE.
  - BIOFILTRATION BMP STATION/OFFSET TAKEN AT BACK OF CURB.
  - 24"x24" CLEANOUT STATION/OFFSET TAKEN AT CENTER OF STRUCTURE.





**NOTES:**

- CONCRETE SHALL BE 520-C-2500
- SEAL PLASTIC LINER TO ADJACENT IMPROVEMENT AND EDGE RESTRAINTS PER IMPERMEABLE LINER FASTENING DETAIL. LINER TO EXTEND THE FULL DEPTH OF THE BMP AS SHOWN.

**SECTION A-A**  
BIOFILTRATION BMP 1 & 2

**SECTION B-B**  
BIOFILTRATION BMP

**SECTION C-C**  
BIOFILTRATION BMP 3

**IMPERMEABLE LINER FASTENING DETAIL**  
NOT TO SCALE

**AS BUILT**

INSPECTOR: \_\_\_\_\_ DATE: \_\_\_\_\_  
 REVIEWED BY: \_\_\_\_\_ EXP: \_\_\_\_\_ DATE: \_\_\_\_\_  
 P.E. \_\_\_\_\_

ENGINEER OF WORK	REVISION DESCRIPTION	DATE	INITIAL	OTHER APPROVAL	DATE	INITIAL	CITY APPROVAL

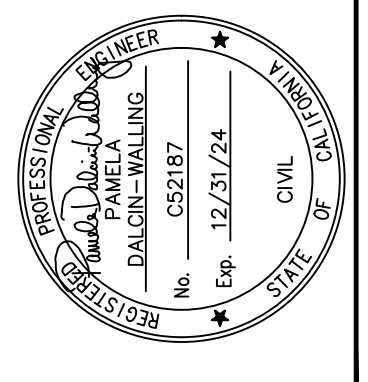
**CITY OF CARLSBAD**  
TRANSPORTATION DEPARTMENT

**STORM DRAIN DETAILS FOR:**  
EL CAMINO REAL  
ROADWAY IMPROVEMENTS  
FROM SUNNY CREEK RD TO JACKSPAR DR

APPROVED: *Hanna Ajzad*  
HOSSEIN AJZAD  
2/16/2024

ENGINEERING MANAGER R/E 75991 EXPIRES 6/30/24 DATE: \_\_\_\_\_  
 DWN BY: *SM*  
 CHKD BY: *DW*  
 REV'D BY: *PDW*

PROJECT NO. 6094 DRAWING NO. DWG 529-1















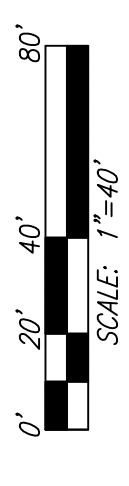


**STRIPING AND PAVEMENT MARKING LEGEND:**

- 12 WHITE DASHED LANE LINE, CA MUTCD, FIGURE 3A-102 DETAIL 12
- 38 CHANNELIZING LINE, CA MUTCD, FIGURE 3A-112 DETAIL 38
- 39 BIKE LANE LINE, CA MUTCD, FIGURE 3A-112 DETAIL 39
- 59A BIKE LANE INTERSECTION LINE, CA MUTCD, FIGURE 3A-112 DETAIL 39A
- BL HELMETED BICYCLIST SYMBOL AND BIKE LANE ARROW PAVEMENT MARKING, CA MUTCD, FIGURE 9C-3
- H 12" WHITE THERMOPLASTIC PAVEMENT MARKING, 45 DEGREES AT 40' C-C
- XW 12" WHITE CONTINENTAL CROSSWALK, DETAIL SHEET 21
- SR SHARED ROADWAY BICYCLE MARKING, CTSP A24C
- IV TYPE IV (LT/RT) ARROW, CTSP A24A
- SA 'SIGNAL AHEAD' PAVEMENT MARKING WORD, CTSP A24D
- LL 12" WHITE LIMIT LINE
- I GREEN PAINT BIKE LANE CONFLICT, DETAIL SHEET 21
- MC YELLOW PAINT MEDIAN CURB

**SIGNING LEGEND:**

- RL RELOCATE ROADSIDE SIGN
- PP PROTECT EXISTING ROADSIDE SIGN IN PLACE
- RM REMOVE ROADSIDE SIGN
- IS INSTALL ROADSIDE SIGN



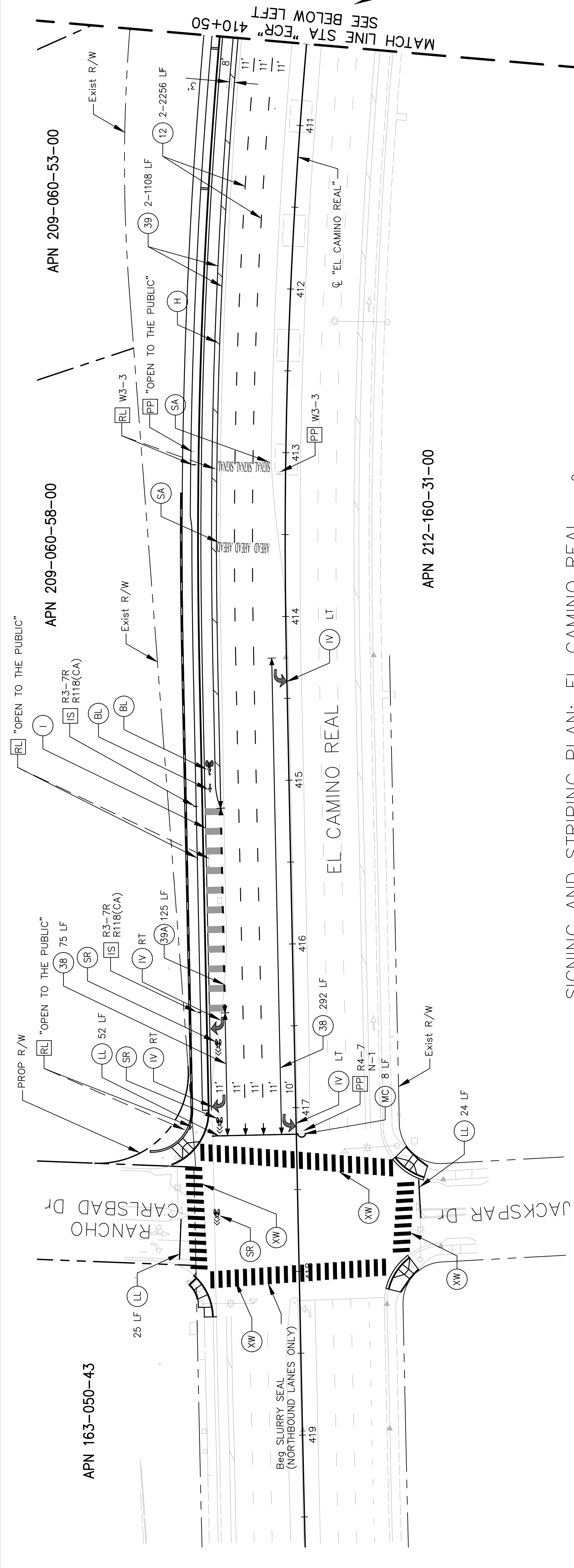
**"AS BUILT"**

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_

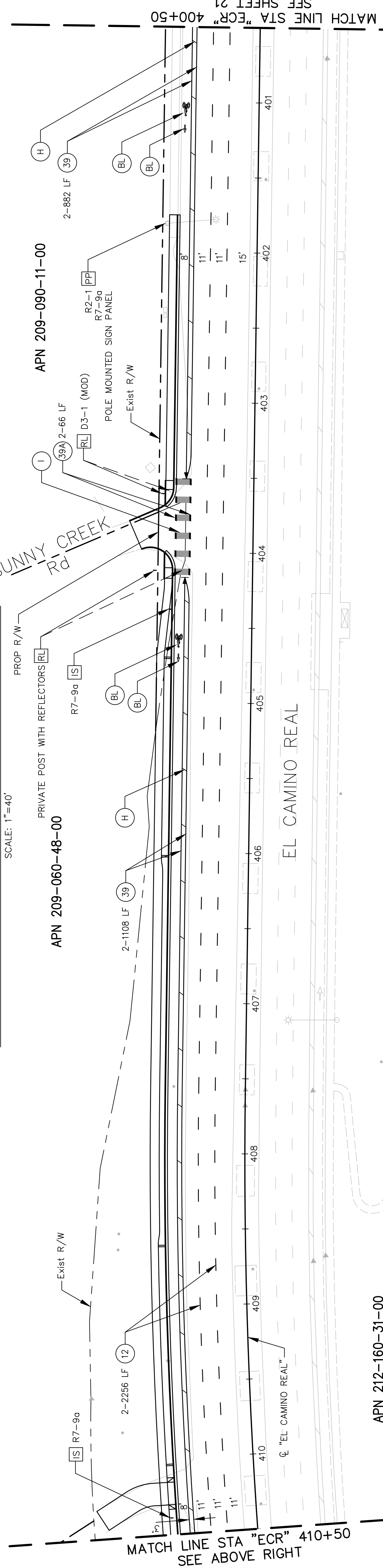
REVIEWED BY: \_\_\_\_\_

INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

SHEET 20	CITY OF CARLSBAD TRANSPORTATION DEPARTMENT	SHEETS 43
SIGNING AND STRIPING PLANS FOR: <b>EL CAMINO REAL ROADWAY IMPROVEMENTS</b> FROM SUNNY CREEK Rd TO JACKSPAR Dr		
APPROVED: <i>Hossein Ajideh</i> HOUSSEIN AJIDEH ENGINEERING MANAGER	RECEIVED: 6/30/24	DATE
DWN BY: EL	PROJECT NO. 6094	DRAWING NO. DWG 529-1
CHKD BY: JN		
REV'D BY: JN		



SIGNING AND STRIPING PLAN: EL CAMINO REAL  
SCALE: 1"=40'



SIGNING AND STRIPING PLAN: EL CAMINO REAL  
SCALE: 1"=40'

APN 212-160-31-00

APN 212-160-31-00

**RIGHT LANE MUST TURN RIGHT**  
R3-7R (36'x36')

**Sunny Creek**  
D3-1 (MOD) (VARIES 12")

**OPEN TO THE PUBLIC**  
SPECIAL SIGN (18'x12')

**SPEED LIMIT 55**  
R2-1 (30'x36')

**R4-7 (36'x36')**

**R7-90 (12'x18')**

**W3-3 (30'x30')**

**EXCEPT BICYCLE**  
R18(CA) (18'x12')

SIGNING AND STRIPING PLAN: EL CAMINO REAL  
SCALE: 1"=40'

**DIGIART ENGINEERING**  
811  
CALL 2 FULL WORKING DAYS BEFORE YOU DIG

**DE DOKKEN ENGINEERING**  
1545 PRADER ROAD  
SUNNYVALE, CA 94088  
(650) 944-8877

PROFESSIONAL ENGINEER  
CELESTINE PEKINSE  
No. 087088  
Exp. 06/30/2025  
STATE OF CALIFORNIA

ENGINEER OF WORK	REVISION DESCRIPTION	DATE	INITIAL	OTHER APPROVAL	DATE	INITIAL	CITY APPROVAL































SHEET 28	SHEETS 43
CITY OF CARLSBAD TRANSPORTATION DEPARTMENT	
RETAINING WALL No. 413 PLANS FOR <b>EL CAMINO REAL ROADWAY IMPROVEMENTS</b> FROM SUNNY CREEK RD TO JACKSPAR DR	
APPROVED: <i>Hossein Ajideh</i>	HOSSEIN AJIDEH 2/16/2024
ENGINEERING MANAGER RCE 75991	EXPIRES 6/30/24
DWN BY: <i>WD</i>	DRAWING NO. DWG 529-1
CHKD BY: <i>CT</i>	PROJECT NO. 6094
RVID BY: <i>WT</i>	

ENGINEER OF WORK	REVISION DESCRIPTION	OTHER APPROVAL
DATE: _____ INITIAL: _____	DATE: _____ INITIAL: _____	DATE: _____ INITIAL: _____
DATE: _____ INITIAL: _____	DATE: _____ INITIAL: _____	DATE: _____ INITIAL: _____

PROFESSIONAL ENGINEER  
 Charles Tornaghi  
 No. 060558  
 Exp. 02/20/24  
 CIVIL  
 STATE OF CALIFORNIA

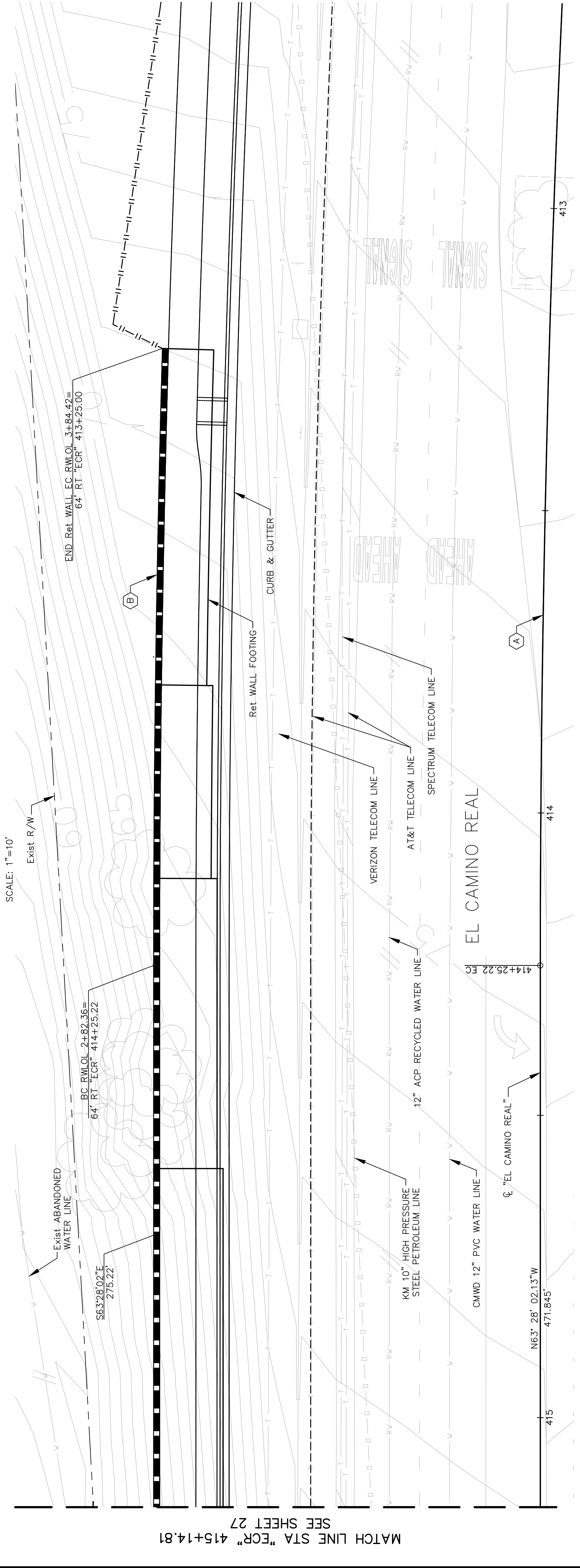
**DE DOKKEN**  
 ENGINEERING  
 1540 PALMER ROAD  
 SUITE 100  
 SAN DIEGO, CA 92108  
 (619) 514-8877

**DIGART**  
 811  
 CALL 2 FULL WORKING DAYS  
 BEFORE YOU DIG

**CURVE DATA**

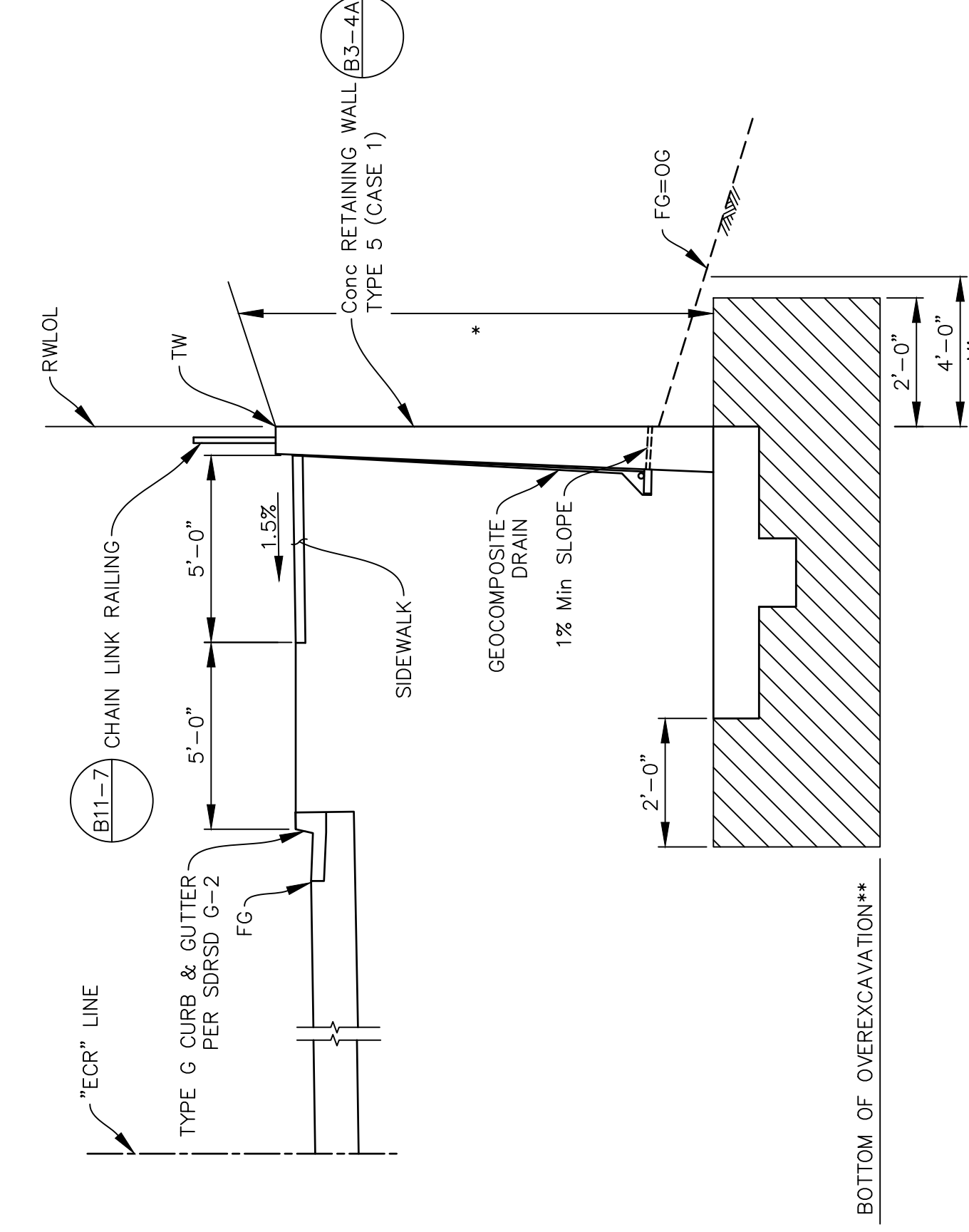
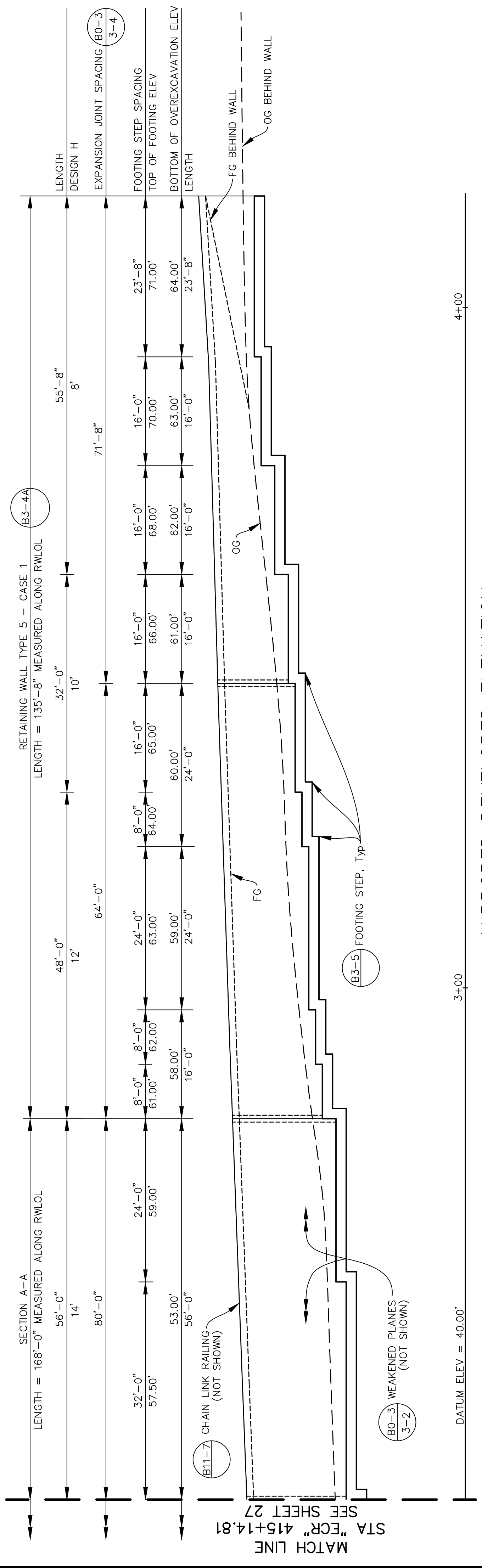
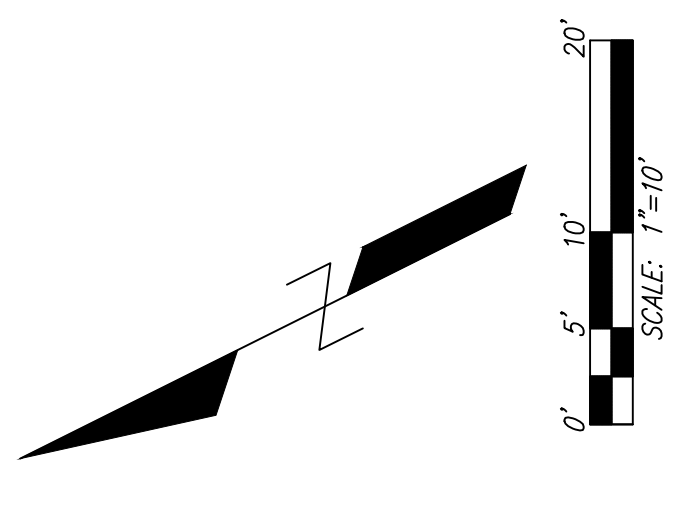
(A)	R = 3499.87'
(A)	L = 102.06'
(A)	T = 335.40'
(A)	Δ = 01°56'53"
(B)	R = 3563.87'
(B)	L = 102.06'
(B)	T = 335.40'
(B)	Δ = 01°56'53"

PLAN  
SCALE: 1"=10'



TYPICAL CROSS SECTION  
NOT TO SCALE

- \* LIMITS OF CLASS 1 FINISH, MOJAVE BEIGE COLORED CONCRETE STAINING, AND ANTI-GRAFFITI COATING.
  - \*\* SEE ELEVATION VIEW FOR BOTTOM OF OVEREXCAVATION ELEVATIONS.
- Denotes LIMITS OF OVEREXCAVATION AND ADDITIONAL STRUCTURE BACKFILL.



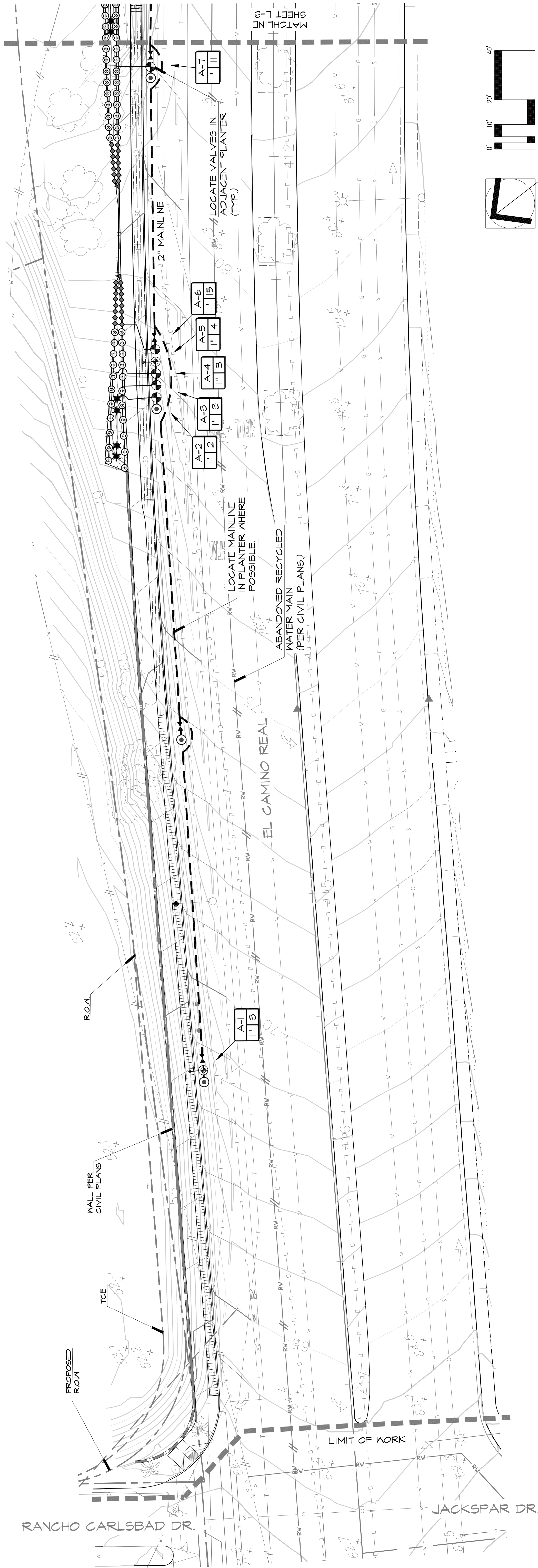












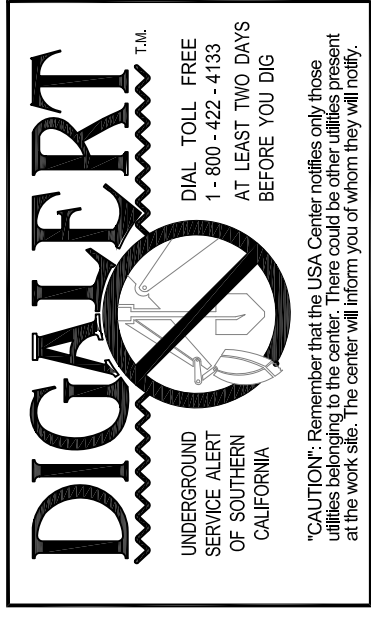
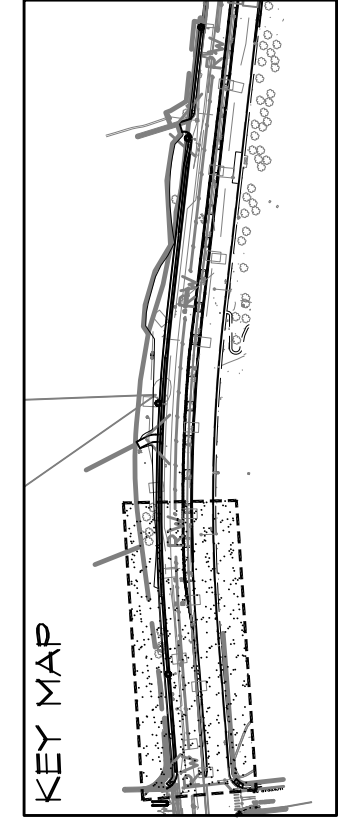
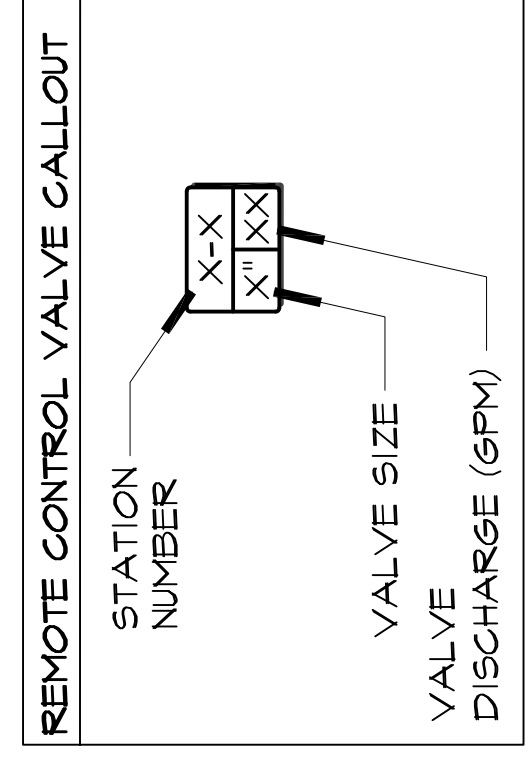
**TEMPORARY IRRIGATION NOTES:**

- ALL IRRIGATION OUTSIDE OF THE RIGHT OF WAY WITHIN T.C.E. IS TO BE TEMPORARY. SHALL BE INSTALLED ON-GRADE UTILIZING "BROWNLINE" UV PVC, SCHEDULE 40.
- SECURE ALL ON-GRADE PIPE WITH TIE-DOWN PINS AT A MINIMUM OF 8' SPACING AND AT ALL ANGLE POINTS.
- ALL IRRIGATION OUTSIDE OF THE RIGHT OF WAY IS TO BE REMOVED BY CONTRACTOR WHEN PLANTING HAS BEEN DEEMED ESTABLISHED AND NO LONGER NEEDING IRRIGATED BY A CITY REPRESENTATIVE 12 MONTHS AFTER ESTABLISHMENT.

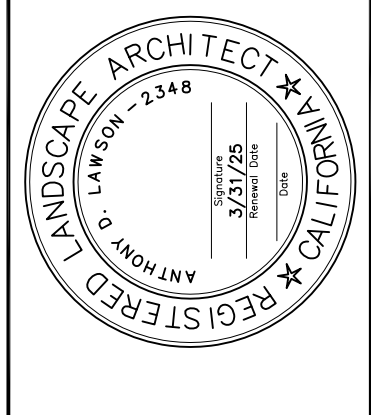
**NOTES:**

- PLANS ARE DIAGNOSTIC AND APPROXIMATE. ALL PIPING, VALVE BOXES, AND IRRIGATION EQUIPMENT SHALL BE LOCATED IN OR UNDER THE HARDSCAPE UNLESS WITHIN A SLEEVE GROUP VALVE BOXES AND LOCATE IN SHRUB AREAS WHENEVER POSSIBLE.
- ALL END-RUNS SHALL BE 3/4" PVC 50# 40 PIPE UNLESS STATED OTHERWISE.
- CONTRACTOR TO COORDINATE PRECISE IRRIGATION CONTROLLER LOCATION WITH LANDSCAPE ARCHITECT, CITY ENGINEER OR HIS REPRESENTATIVE.
- ANY OTHER UTILITY LINES THAT MAY BE ON SITE PRIOR TO TRENCHING OR INSTALLING IRRIGATION.
- CONTRACTOR TO OBTAIN FIELD VERIFICATION FROM PROJECT ENGINEER FOR VALVE BOXES LOCATION.
- CONTRACTOR TO OBTAIN FIELD VERIFICATION FROM PROJECT ENGINEER OF ALL IRRIE LOCATIONS PRIOR TO INSTALLATION OF BUBBLERS.
- CONTRAILER VALVES ARE TO BE CONNECTED TO IRRIGATION CONTROLLER.
- ANTI-DRAIN VALVES SHALL BE INSTALLED AS REQUIRED TO PREVENT ALL LOW HEAD DRAINAGE.

SEE SHEETS L-2 - L-4 FOR IRRIGATION PLANS  
SEE SHEET L-5 FOR IRRIGATION LEGENDS & NOTES  
SEE SHEET L-6 & L-7 FOR IRRIGATION DETAILS



**ADL PLANNING ASSOCIATES**  
L.A.N.D.S.C.A.P.E ARCHITECTURE  
2979 STATE STREET SUITE "C"  
CARLSBAD, CA 92008 (760) 728-8637 FAX: (760) 728-8324



"AS BUILT"

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

CITY OF CARLSBAD  
PLANNING DIVISION

SHEET 31 SHEETS 43

LANDSCAPE IMPROVEMENT PLANS FOR:  
**EL CAMINO REAL ROADWAY IMPROVEMENTS**  
FROM SUNNY CREEK Rd TO JACKSPAR Dr

APPROVED: *Hossein Ajdari* HOSSEIN AJDARI  
ENGINEERING MANAGER RCE 75991 EXPIRES 6/30/24 DATE 7/26/2024

DWN BY: \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. \_\_\_\_\_  
CHKD BY: \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. \_\_\_\_\_  
RWND BY: \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. \_\_\_\_\_

**L-2**

ENGINEER OF WORK	DATE	INITIAL	REVISION DESCRIPTION	DATE	INITIAL	CITY APPROVAL



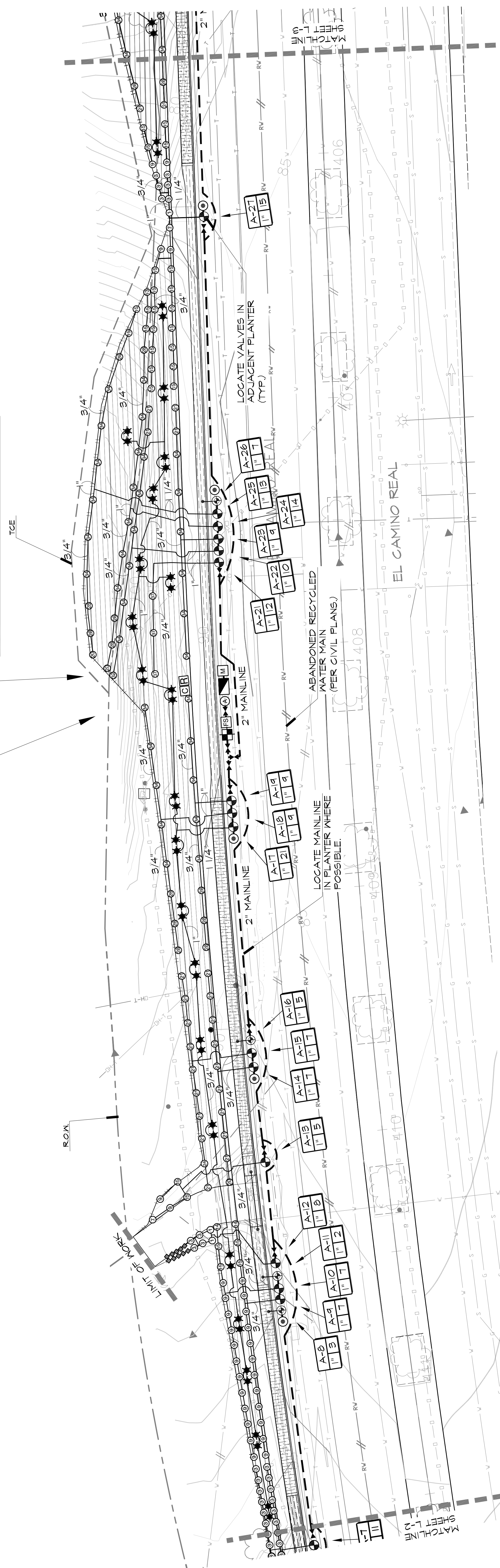
**POINT OF CONNECTION "A" NOTES:**

1. CONFIRM PRECISE LOCATION OF IRRIGATION METER WITH CIVIL IMPROVEMENT PLANS.
2. LANDSCAPE CONTRACTOR TO COORDINATE WITH THE PROJECT ENGINEER AND GENERAL CONTRACTOR FOR THE INSTALLATION OF IRRIGATION METER BY CMVD (760) 498-2722.
3. CONTRACTOR TO INSTALL DOWNSIDE OF METER
  - 2" BACKFLOW PREVENTOR
  - 2" PRESSURE REGULATOR
  - 1/2" FLOW METER WITH SHUT OFF DEVICE
  - AVAILABLE PSI: 100 (CONTRACTOR TO VERIFY AVAILABLE PSI)

**POINT OF CONNECTION "A":**

- NEW POTABLE WATER METER LOCATION:
- ELEVATION AT WATER METER: +/- 85.5'
- METER SIZE: 1 1/2"
- STREET STATION NUMBER: 408+0.0
- REQUIRED STATIC WATER PRESSURE: +/- 45 PSI
- 2" BACKFLOW PREVENTOR
- 2" PRESSURE REGULATOR
- 1/2" MASTER VALVE
- 1/2" FLOW METER WITH SHUT OFF DEVICE
- MAX GPM DEMAND: 29 GPM
- CARLSBAD MUNICIPAL WATER DISTRICT (760) 498-2722

CONTROLLER "A" (48 STATIONS) CALSENSE C53 SERIES W/ CALSENSE BB-1 RAIN BUCKET. LOCATE IN PLANTER AREA IN A STAINLESS STEEL ENCLOSURE COORDINATE WITH GENERAL CONTRACTOR FOR 120V ELECTRIC AND COMMUNICATION SERVICE



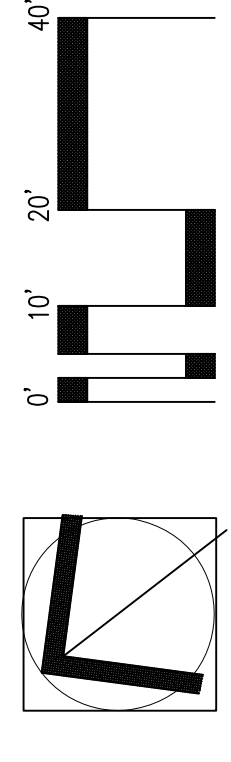
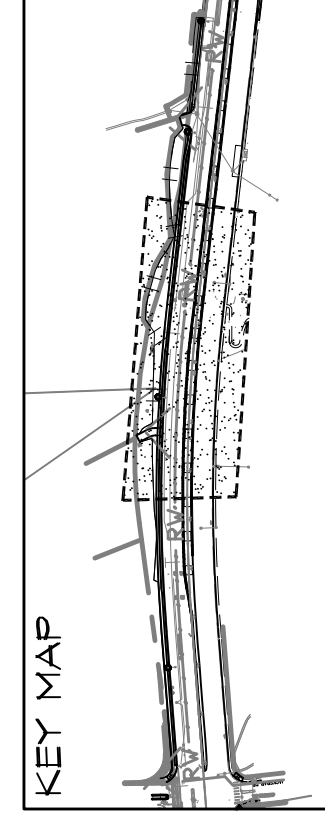
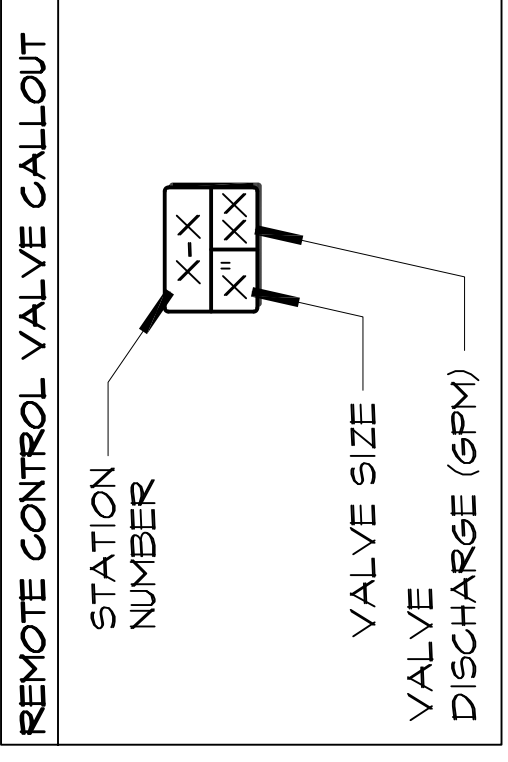
**TEMPORARY IRRIGATION NOTES:**

1. ALL IRRIGATION OUTSIDE OF THE RIGHT OF WAY WITHIN T.C.E. IS TO BE TEMPORARY. SHALL BE INSTALLED ON-GRADE UTILIZING "BROWNLINE" UV PVC, SCHEDULE 40.
2. SECURE ALL ON-GRADE PIPE WITH TIE-DOWN PINS AT A MINIMUM OF 8' SPACING AND AT ALL ANGLE POINTS.
3. ALL IRRIGATION OUTSIDE OF THE RIGHT OF WAY IS TO BE REMOVED BY CONTRACTOR WHEN PLANTING HAS BEEN DEEMED ESTABLISHED AND NO LONGER NEEDING IRRIGATED BY A CITY REPRESENTATIVE 12 MONTHS AFTER ESTABLISHMENT.

**NOTES:**

1. PLANS ARE DIAGNOSTIC AND APPROXIMATE. ALL PIPING, VALVE BOXES, IRRIGATION EQUIPMENT SHALL BE LOCATED IN OR UNDER THE HARDSCAPE UNLESS OTHERWISE NOTED. VERIFY ALL LOCATIONS PRIOR TO INSTALLATION OF BUBBLERS & ANY OTHER UTILITY LINES THAT MAY BE ON SITE PRIOR TO TRENCHING OR INSTALLING IRRIGATION.
2. ALL END-RUNS SHALL BE 3/4" PVC SCH 40 PIPE UNLESS STATED OTHERWISE.
3. CONTRACTOR TO COORDINATE PRECISE IRRIGATION CONTROLLER LOCATION WITH LANDSCAPE ARCHITECT, CITY ENGINEER OR HIS REPRESENTATIVE PRIOR TO INSTALLATION.
4. CONTRACTOR TO OBTAIN FIELD VERIFICATION FROM PROJECT ENGINEER FOR VALVE BOXES LOCATION.
5. CONTRACTOR TO OBTAIN FIELD VERIFICATION FROM PROJECT ENGINEER OF ALL IRRIE LOCATIONS PRIOR TO INSTALLATION OF BUBBLERS.
6. CONTRACTOR TO OBTAIN FIELD VERIFICATION FROM PROJECT ENGINEER OF ALL ANTI-DRAIN VALVES 'A' ARE TO BE CONNECTED TO IRRIGATION CONTROLLER 'A'.
7. ANTI-DRAIN VALVES SHALL BE INSTALLED AS REQUIRED TO PREVENT ALL LOW HEAD DRAINAGE.

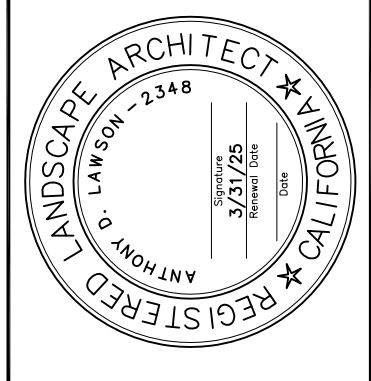
SEE SHEETS L-2 - L-4 FOR IRRIGATION PLANS  
SEE SHEET L-5 FOR IRRIGATION LEGENDS & NOTES  
SEE SHEET L-6 & L-7 FOR IRRIGATION DETAILS



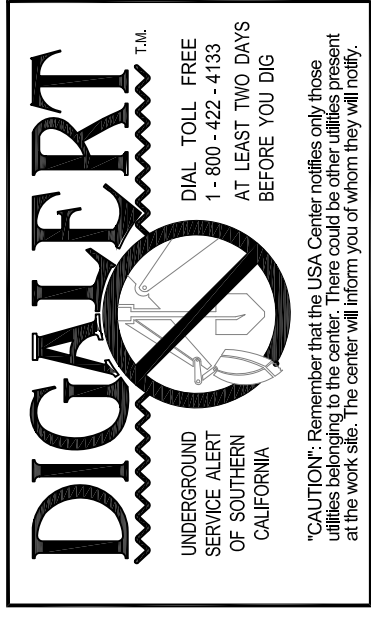
L-3

"AS BUILT"	
P.E. _____	DATE _____
REVIEWED BY: _____	INSPECTOR _____
CITY OF CARLSBAD	PLANNING DIVISION
SHEET 32	SHEETS 43
LANDSCAPE IMPROVEMENT PLANS FOR: <b>EL CAMINO REAL ROADWAY IMPROVEMENTS</b> FROM SUNNY CREEK Rd TO JACKSPAR Dr	
APPROVED: <i>Hossein Ajdari</i>	HOSSEIN AJDARI 2/26/2024
ENGINEERING MANAGER: RCE 75991	EXPIRES: 6/30/24
DWN BY: _____	DRAWING NO. _____
CHKD BY: _____	PROJECT NO. 6094
RWMD BY: _____	DWG 529-1

REVISION DESCRIPTION	ENGINEER OF WORK	DATE	INITIAL	OTHER APPROVAL	DATE	INITIAL	CITY APPROVAL



**ADL PLANNING ASSOCIATES**  
L.A.N.D.S.C.A.P.E. ARCHITECTURE  
2979 STATE STREET SUITE "C"  
CARLSBAD, CA 92008  
TEL: (760) 728-8637  
FAX: (760) 728-8324









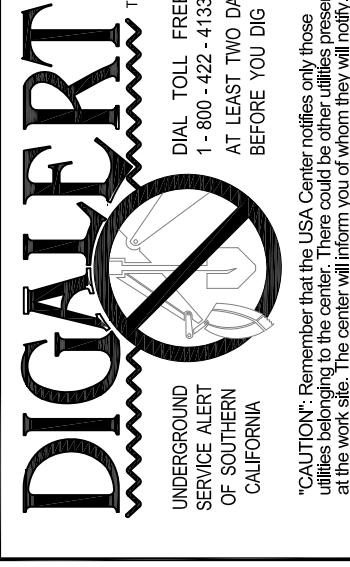
## IRRIGATION EQUIPMENT LEGEND:

SYMBOL	EQUIPMENT	MANUFACTURER / MODEL #	NOTES	DETAILS
	IRRIGATION WATER METER	--	SIZE VARIES PER PLAN	--
	BACKFLOW PREVENTER ASSEMBLY	FEBCO / 825XL REDUCED PRESSURE	SIZE PER PLAN	DETAIL B, SHEET L-6
	PRESSURE REDUCING VALVE	WILKINS / 500 XL	--	DETAIL C, SHEET L-6
	FLOW SENSOR	CALSENSE / FM	SIZE PER PLAN	DETAIL E, SHEET L-6
	MASTER CONTROL VALVE	WEATHERMATIC / 8200CR	--	DETAIL D, SHEET L-6
	BALL VALVE (LINE SIZE)	WILKINS / 850 XL	--	DETAIL F, SHEET L-6
	QUICK COUPLER VALVE	NELSON / #7644 - 1"	INSTALLED IN 6" ROUND VALVE BOX	DETAIL H, SHEET L-6
	REMOTE CONTROL VALVE	WEATHERMATIC / 8200CR	SIZE PER PLANS	DETAIL G, SHEET L-6
	DRIP REMOTE CONTROL VALVE	HUNTER / ICZ-XXX	SIZE PER PLANS	DETAIL G, SHEET L-6
	48 STATION IRRIGATION CONTROLLER	CALSENSE / C53-40-5/CS3-6R-5TUBBY / COMM-5YR	--	DETAIL A, SHEET L-6
	RAIN SENSOR	CALSENSE / RB-1 RAIN BUCKET	INSTALL PER MANUFACTURER INSTRUCTIONS	-
	DRIP TUBING (61 GPH EMITTERS 12" ON CENTER, TUBING ROGS TO BE MAX 16" APART IN PLANTING AREAS)	NETAFIM / TLDL6-123	--	DETAILS S SHEET L-7
	END CAP OF DRIP DISCHARGE HEADER	RAINBIRD / MDCFCAP	INSTALL FLUSH VALVE INSIDE A SEPARATE VALVE BOX	DETAIL P, SHEET L-8
	AIR / VACUUM RELIEF VALVE	RAINBIRD / ARV050	INSTALL IN VISIBLE AREA OF PLANTING BED	DETAIL Q, SHEET L-8
	OPERATING INDICATOR SET	HUNTER / ECO-ID	INSTALL IN VISIBLE AREA OF PLANTING BED	DETAIL R, SHEET L-8
	PVC WATER LATERAL LINE	PACIFIC PLASTICS	PVC CLASS 200	DETAIL I,J SHEET L-6
	PVC WATER MAINLINES	PACIFIC PLASTICS	PVC CLASS 315 (2" & GREATER) SCH. 40 (1-1/2" & SMALLER)	DETAIL I,J SHEET L-6&L-7
	PVC PIPE SLEEVING	PACIFIC PLASTICS	SCH. 80 UNDER VEHICLE PAVING SCH. 40 UNDER PEDESTRIAN PAVING	DETAIL I SHEET L-6&L-7
NO SYMBOL	SPRING TYPE IN-LINE CHECK VALVE	SPEARS MFG. / 51580	(SIZE PER LATERAL LINE)	--
NO SYMBOL	VALVE BOX	NDS / PRO-SPEC	10" ROUND VB - 312BCB 14" X 14" VB - 314BCB 17" X 30" VB - 326BCB	--

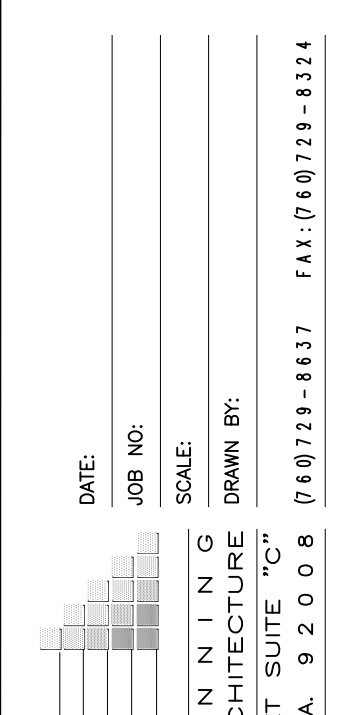
## IRRIGATION NOTES:

- ALL IRRIGATION SYSTEM COMPONENTS SHALL BE INSTALLED AS PER LOCAL CODE. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS.
- CHECK AND VERIFY ALL SITE CONDITIONS, UTILITIES AND SERVICES PRIOR TO TRENCHING. IF DURING CONSTRUCTION IT IS FOUND THAT THE SITE VARIES FROM THE DRAWINGS, NOTIFY THE LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
- WHERE TREES, LIGHT STANDARDS, ETC. ARE AN OBSTRUCTION TO SPRAYS, THEN PIPING AND SPRINKLER HEADS SHALL BE ADJUSTED AND/OR RELOCATED AS NECESSARY TO OBTAIN FULL COVERAGE WITHOUT EXCESSIVE OVERTHROW. DO NOT EXCEED SPACING AS PER MANUFACTURER RECOMMENDATIONS.
- PLANS ARE DIAGRAMMATIC AND APPROXIMATE. ALL PIPING SHALL BE INSTALLED IN PLANTING AREAS EXCEPT WHERE IT IS INFESABLE.
- COORDINATE IRRIGATION WORK WITH PLANTING PLANS TO AVOID CONFLICTING LOCATIONS BETWEEN PIPING AND PLANT PITS.
- ALL HEADS, WHEN LOCATED ADJACENT TO CURBS, HEADERS, SIDEWALKS, WALLS, BUILDING, ETC., ARE TO BE A MIN. OF TWO (2) INCHES TO A MAX. OF FOUR (4) INCHES AWAY FROM THE STRUCTURES.
- ALL CONTROL WIRE SLEEVES UNDER VEHICULAR PAVING SHALL BE SCHEDULE 80, WITH 30" MINIMUM COVER. ALL CONTROL WIRE SLEEVES UNDER PEDESTRIAN PAVING SHALL BE SCHEDULE 40, WITH 18" MIN. COVER.
- PRIOR TO START OF GRADING, THE APPLICANT OR APPLICANT'S AGENT SHALL OBTAIN CITY OF CARLSBAD AUTHORITY. APPROVAL OF A CONSTRUCTION SCHEDULE AND/OR EXHIBIT OUTLINING THE TIMING OF THE SLOPE PLANTING AND IRRIGATION.
- INSTALLATION OF IRRIGATION AS SHOWN ON THE APPROVED PLANS SHALL COMMENCE WITHIN 10 DAYS OF THE TIME WHEN EACH AREA IS BROUGHT TO GRADE AS SHOWN ON THE APPROVED GRADING PLANS.
- LANDSCAPE IRRIGATION SHALL BE APPLIED AT A RATE NOT EXCEEDING THE INFILTRATION RATE OF THE SOIL (MINIMIZING EROSION AND WATER WASTE) BUT SUFFICIENTLY TO ALLOW FOR HEALTHY PLANT GROWTH.
- INSTALL CHECK VALVES AS NEEDED TO PREVENT LOW HEAD DRAINAGE.
- SPECIAL CONSIDERATION SHALL BE GIVEN TO WATER AND ELECTRICAL SERVICES.
- IRRIGATION AND PLANTING SHALL TAKE PLACE AS IMPROVEMENTS PROGRESS.
- CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO INSTALL SLEEVES UNDER PAVEMENT AND TO SERVICE CONTROLLERS IN GARAGE.

SEE SHEET L-2 - L-4 FOR IRRIGATION PLANS  
SEE SHEET L-5 FOR IRRIGATION LEGENDS & NOTES  
SEE SHEET L-6 & L-7 FOR IRRIGATION DETAILS



ADL PLANNING ASSOCIATES  
LANDSCAPE ARCHITECTURE  
C.A.R.L.S.B.A.D. C.A. 9 2 0 0 6 (609) 735-8317 FAX: (609) 735-8314



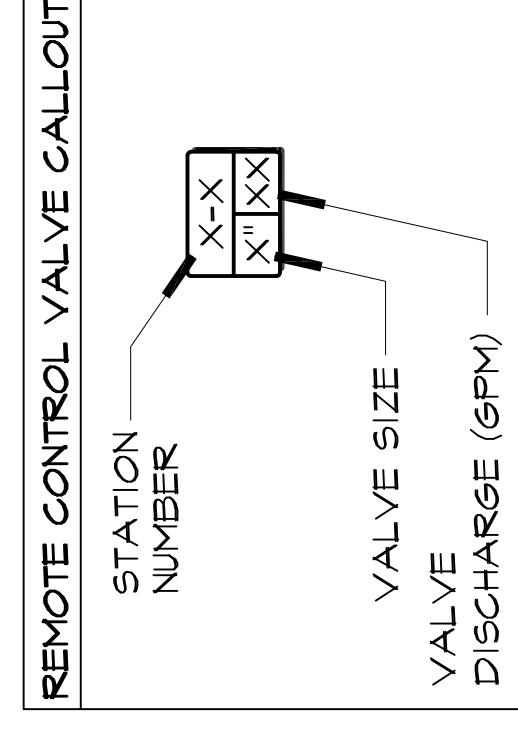
## IRRIGATION HEAD LEGEND:

SYMBOL	DESCRIPTION	MAKE / MODEL	ARC	PSI	RAD.	DISCHARGE (GPM)	SPAC.	DETAIL
	HUNTER PRO NOZZLE	HUNTER / MPR-4A (ADJUSTABLE)	0-360	30	3'-4"	13, 22, 34, 45, 60, 73, 8	3'-4"	DETAIL L, P SHEET L-7
	HUNTER PRO NOZZLE	HUNTER / MPR-6A (ADJUSTABLE)	0-360	30	5'-6"	18, 37, 44, 6, 80, 111, 26	5'-6"	DETAIL L, P SHEET L-7
	HUNTER PRO NOZZLE	HUNTER / MPR-8A (ADJUSTABLE)	0-360	30	7'-8"	22, 44, 54, 80, 111, 132, 176	7'-8"	DETAIL L, P SHEET L-7
	HUNTER PRO NOZZLE	HUNTER / MPR-10A (ADJUSTABLE)	0-360	30	9'-10"	25, 5, 67, 10, 133, 152, 0	7'-8"	DETAIL L, P SHEET L-7
	HUNTER PRO NOZZLE	HUNTER / MPR-12A (ADJUSTABLE)	0-360	30	10'-13"	32, 63, 84, 126, 168, 184, 2, 52	7'-8"	DETAIL L, P SHEET L-7
	HUNTER PRO NOZZLE	HUNTER / MPR-15A (ADJUSTABLE)	0-360	30	14'-16"	47, 43, 124, 186, 2, 40, 2, 74, 3, 72	7'-8"	DETAIL L, P SHEET L-7
	HUNTER PRO NOZZLE	HUNTER / MPR-17A (ADJUSTABLE)	0-360	30	16'-18"	50, 115, 153, 2, 33, 0, 73, 45, 4, 6	7'-8"	DETAIL L, P SHEET L-7
	HUNTER SHORT RADIUS MICRO SPRAY	HUNTER / MPR-2 (90/180)	40, 180	30	3'-4"	39, 79	3'-4"	DETAIL L, P SHEET L-7
	TREE BUBBLER	RAIN BIRD / 1404 PRESSURE COMPENSATING	TRICKLE	40	2'-4"	0.5 (1.0)	2'-4"	DETAIL "K" SHEET L-7

### NOTES:

- ALL SHRUB HEADS INSTALLED FARTHER THAN TEN (10) FEET FROM PAVING, CURBS, SIDEWALKS, STEPS, TURF BOUNDARIES OR OTHER PEDESTRIAN AREAS MAY BE INSTALLED ON RISER WITH RAINBIRD 1812 SAM PRS, WITH IN LINE CHECK VALVE, AND WITH NOZZLE AS PER PLAN
- INSTALL ALL SPRAY HEADS ON 12" 1800 SAM NONPRS IN SHRUBS AREA.

- CONTRACTOR SHALL COORDINATE POWER FOR CONTROLLER AND CONNECTION TO RAIN SENSOR.
- EXISTING IRRIGATION EQUIPMENT SHALL BE PROTECTED IN PLACE. ANY EXISTING IRRIGATION EQUIPMENT DAMAGED SHALL BE REPLACED IN KIND.
- ONLY SUBSURFACE IRRIGATION SHALL BE USED TO IRRIGATE ANY VEGETATION WITHIN TWENTY-FOUR INCHES OF AN IMPERMEABLE SURFACE UNLESS THE ADJACENT IMPERMEABLE SURFACES ARE DESIGNED AND CONSTRUCTED TO CAUSE WATER TO DRAIN ENTIRELY INTO A LANDSCAPED AREA
- ALL BACKFLOW PREVENTERS SHALL BE TESTED BY A CERTIFIED TESTER AND RESULTS MUST BE GIVEN TO THE CITY AND THE WATER DISTRICT. CALL (760)438-2722 TO OBTAIN APPROVED CONTRACT BACKFLOW TESTERS. PIPE BETWEEN THE METER AND BACKFLOW PREVENTER SHALL BE "SCHEDULE K HARD COPPER."
- MINIMUM PIPE COVERAGE SHALL BE AS FOLLOWS:
  - PRESSURE LINES:
    - LESS THAN 3" IN DIAMETER - 18" COVER
    - 3" - 5-1/2" IN DIAMETER - 24" COVER
    - 6" OR GREATER DIAMETER - 36" COVER
  - LATERAL LINES:
    - 12" OF COVER
  - SLEEVES UNDER ROADS:
    - GREATER THAN 6" IN DIAMETER - 36" COVER
    - 6" OR LESS IN DIAMETER - 48" COVER
  - SLEEVES UNDER PAVING (NON-ROADS):
    - LESS THAN 3" IN DIAMETER - 18" COVER
    - 3" - 5-1/2" IN DIAMETER - 24" COVER
    - 6" OR GREATER IN DIAMETER - 36" COVER



"AS BUILT"

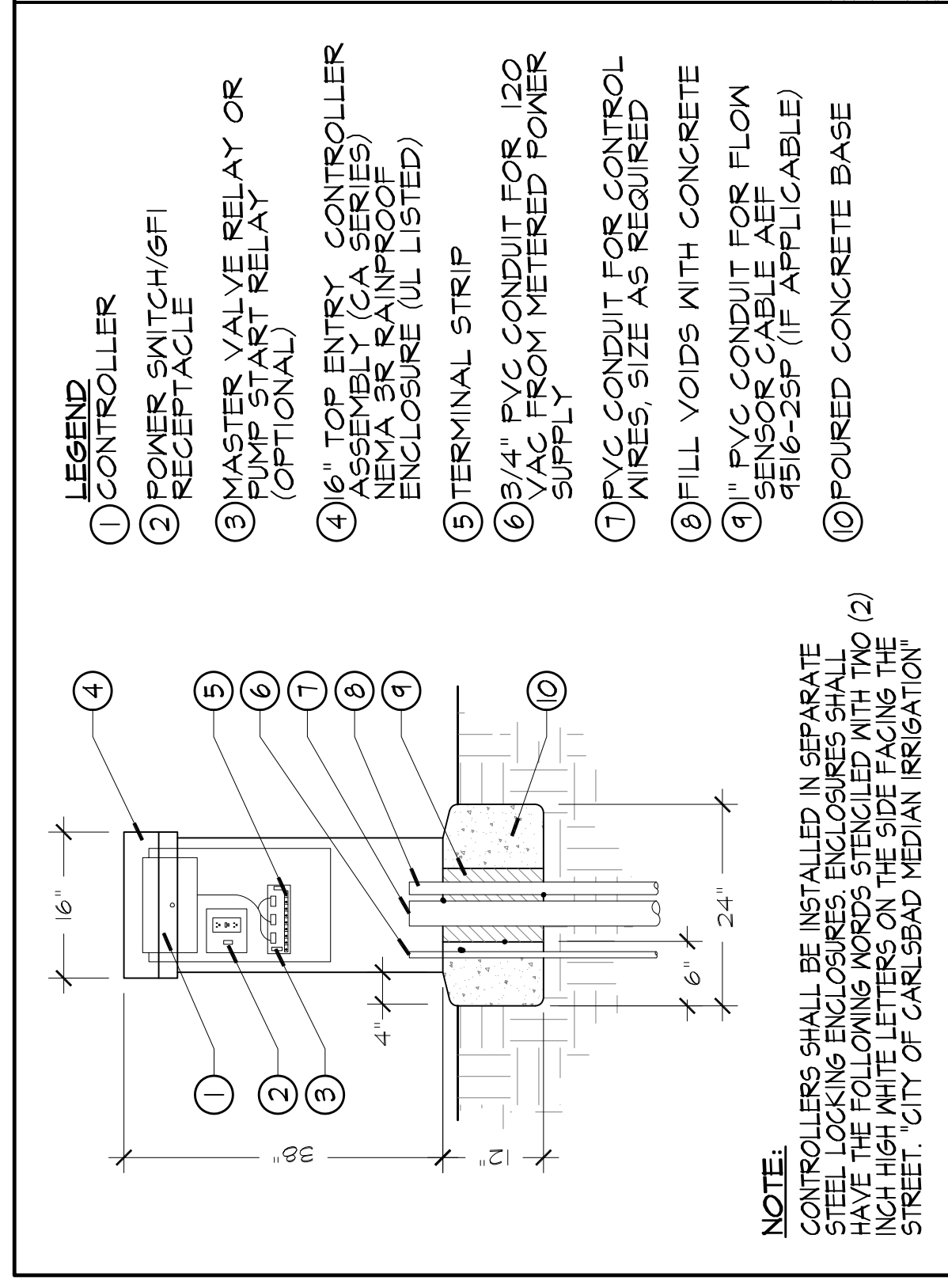
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REVIEWED BY: \_\_\_\_\_  
INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

L-5

REVISION DESCRIPTION	DATE	INITIAL	DATE	INITIAL	DATE	INITIAL

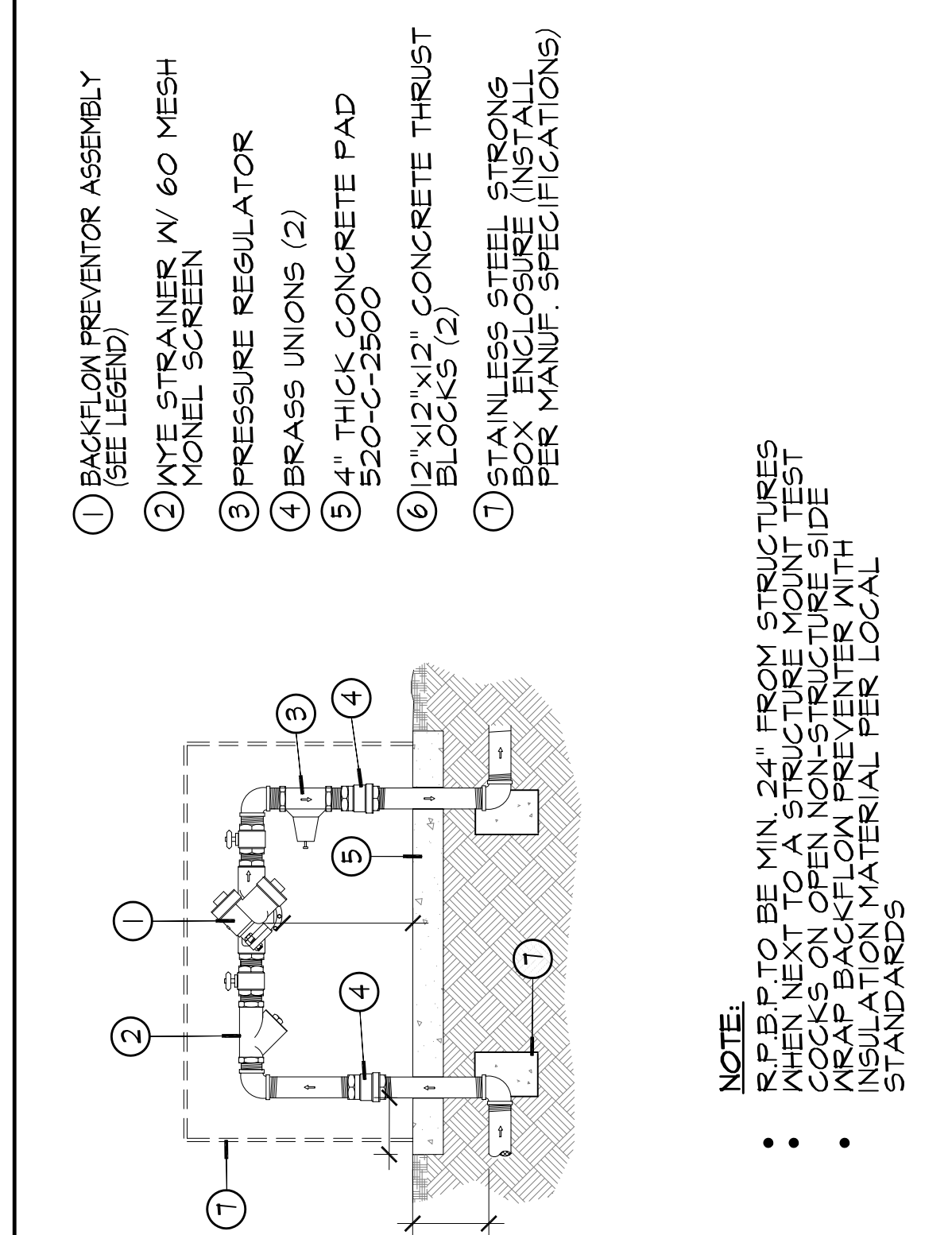
SHEET	34	SHEETS	43
CITY OF CARLSBAD PLANNING DIVISION			
LANDSCAPE IMPROVEMENT PLANS FOR: <b>EL CAMINO REAL ROADWAY IMPROVEMENTS</b> FROM SUNNY CREEK Rd TO JACKSPAR DR			
APPROVED:	Hossein Ajdeh	HOSSEIN AJDEH	2/16/2024
ENGINEERING MANAGER	RCE 75991	EXPIRES	6/30/24
DWN BY:		PROJECT NO.	6094
CHKD BY:		DRAWING NO.	DWG 529-1
R/VD BY:			





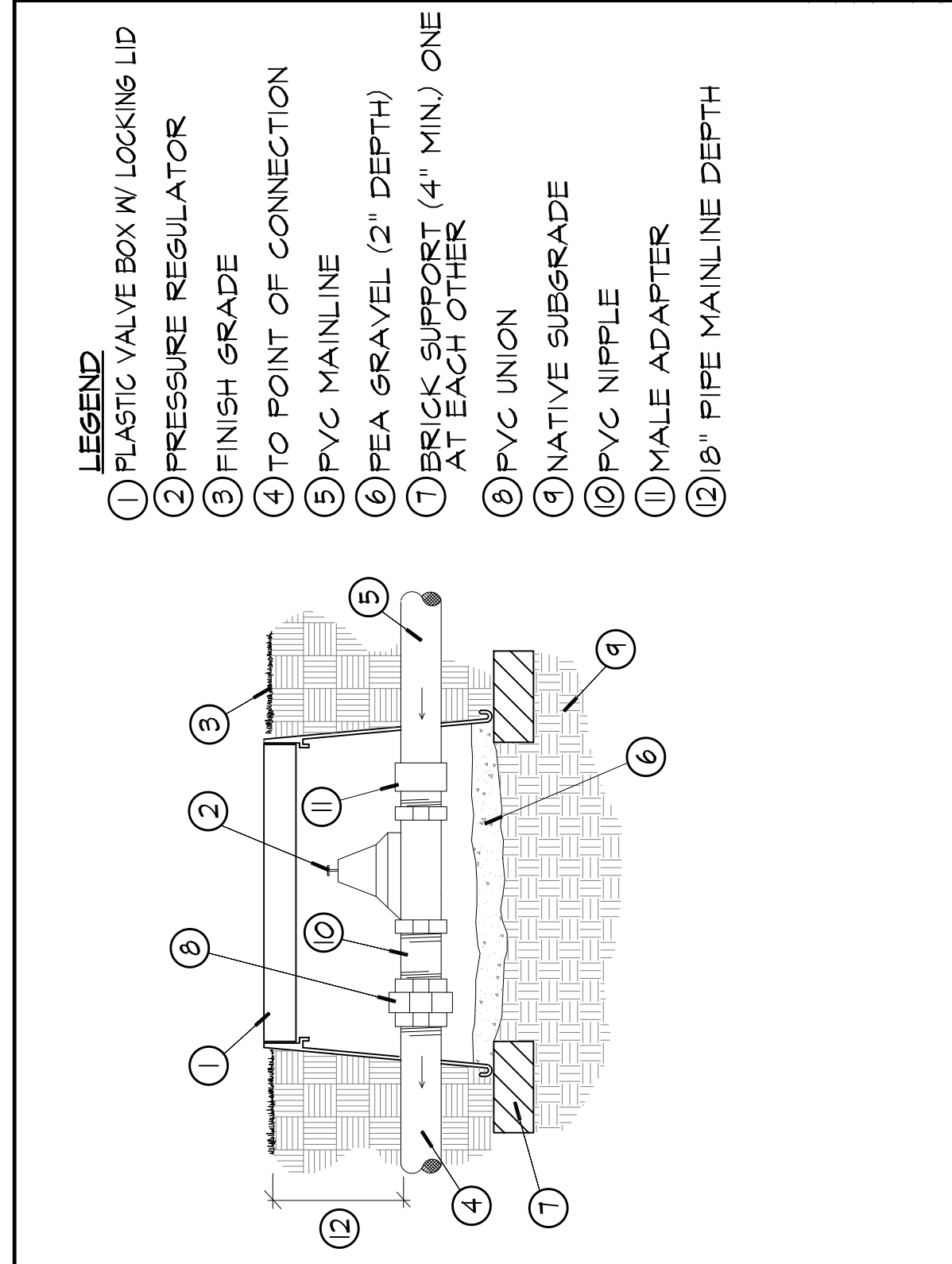
- LEGEND**
- 1 CONTROLLER
  - 2 POWER SWITCH/GFI RECEPTACLE
  - 3 MASTER VALVE RELAY OR PUMP START RELAY (OPTIONAL)
  - 4 1/2" TOP ENTRY CONTROLLER ASSEMBLY (CA SERIES) NEMA 3R RAINPROOF ENCLOSURE (UL LISTED)
  - 5 TERMINAL STRIP
  - 6 3/4" PVC CONDUIT FOR 120 VAC FROM METERED POWER SUPPLY
  - 7 PVC CONDUIT FOR CONTROL WIRES, SIZE AS REQUIRED
  - 8 FILL VOIDS WITH CONCRETE
  - 9 1" PVC CONDUIT FOR FLOW SENSOR CABLE AEF 4516-235F (IF APPLICABLE)
  - 10 POURED CONCRETE BASE

**NOTE:**  
CONTROLLERS SHALL BE INSTALLED IN SEPARATE STEEL LOCKING ENCLOSURES. ENCLOSURES SHALL BE 1/2" THICK WITH THE HINGES ON THE SIDE FACING THE STREET. CITY OF CARLSBAD MEDIAN IRRIGATION



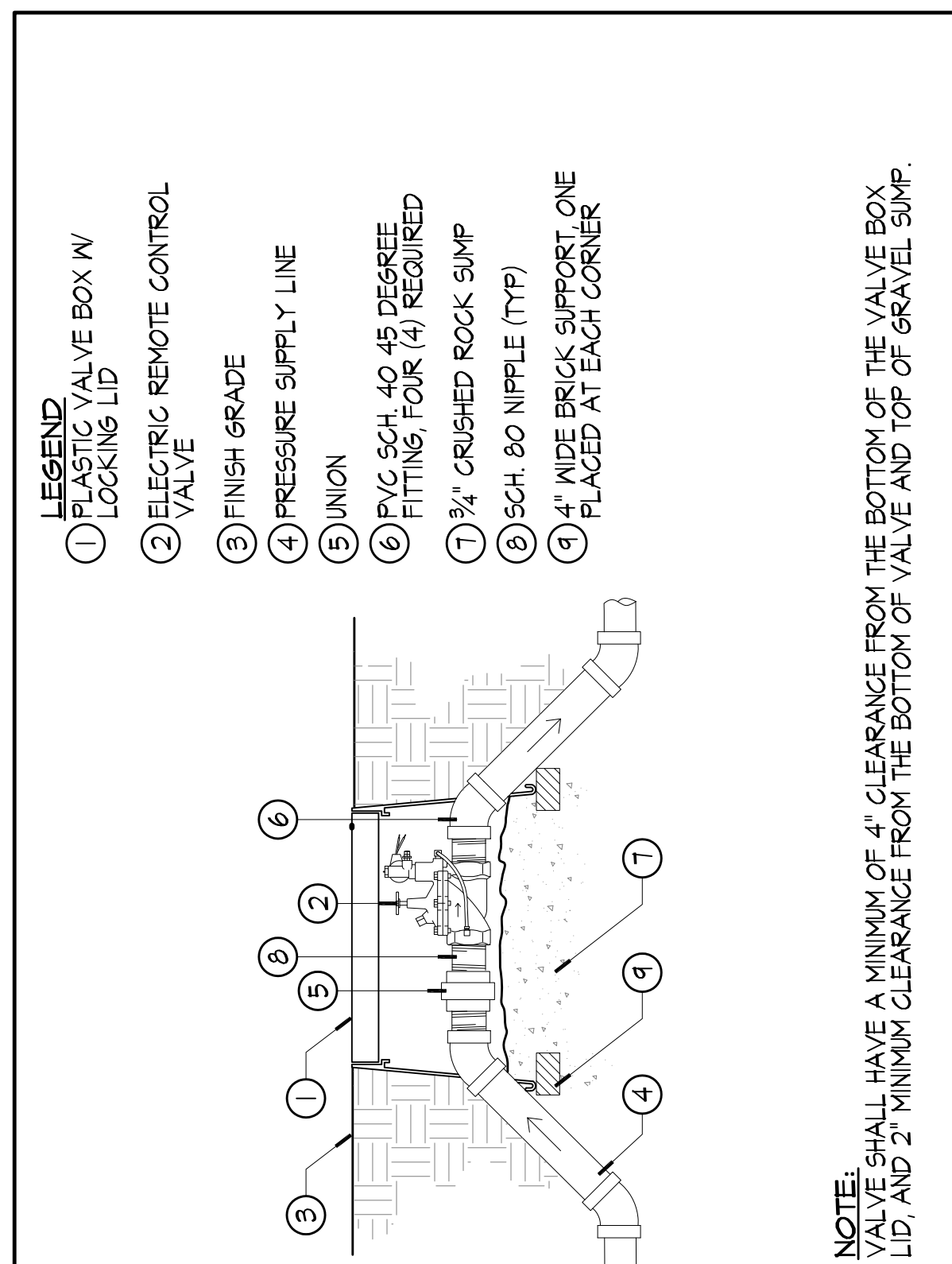
- LEGEND**
- 1 BACKFLOW PREVENTOR ASSEMBLY (SEE LEGEND)
  - 2 WYE STRAINER W/ 60 MESH MONEL SCREEN
  - 3 PRESSURE REGULATOR
  - 4 BRASS UNIONS (2)
  - 5 4" THICK CONCRETE PAD 520-C-2500
  - 6 12"x12"x12" CONCRETE THRUST BLOCKS (2)
  - 7 STAINLESS STEEL STRONG BOX LIDS (2) (INSTALL PER MANUF. SPECIFICATIONS)

**NOTE:**  
R.P.B.P. TO BE MIN. 24" FROM STRUCTURES WHEN NEXT TO A STRUCTURE MOUNT TEST COCKS ON OPEN NON-STRUCTURE SIDE WRAP BACKFLOW PREVENTOR WITH INSULATION MATERIAL PER LOCAL STANDARDS



- LEGEND**
- 1 PLASTIC VALVE BOX W/ LOCKING LID
  - 2 PRESSURE REGULATOR
  - 3 FINISH GRADE
  - 4 TO POINT OF CONNECTION
  - 5 PVC MAINLINE
  - 6 PEA GRAVEL (2" DEPTH)
  - 7 BRICK SUPPORT (4" MIN.) ONE AT EACH OTHER
  - 8 PVC UNION
  - 9 NATIVE SUBGRADE
  - 10 PVC NIPPLE
  - 11 MALE ADAPTER
  - 12 8" PIPE MAINLINE DEPTH

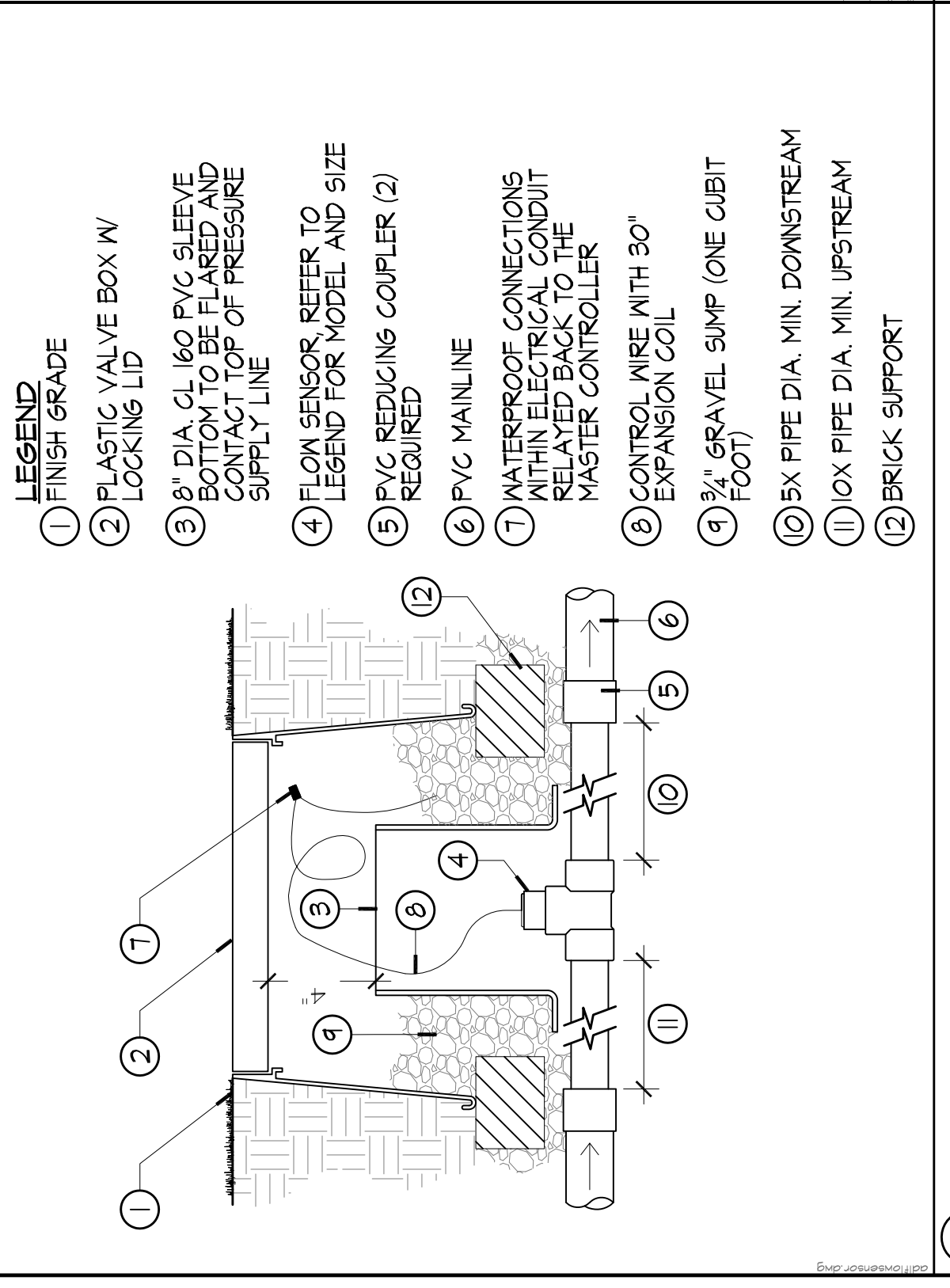
**SCALE: N.T.S.**



- LEGEND**
- 1 PLASTIC VALVE BOX W/ LOCKING LID
  - 2 ELECTRIC REMOTE CONTROL VALVE
  - 3 FINISH GRADE
  - 4 PRESSURE SUPPLY LINE
  - 5 UNION
  - 6 PVC SCH. 40 45 DEGREE FITTING FOUR (4) REQUIRED
  - 7 3/4" CRUSHED ROCK SUMP
  - 8 SCH. 80 NIPPLE (TYP)
  - 9 4" WIDE BRICK SUPPORT, ONE PLACED AT EACH CORNER

**NOTE:**  
VALVE SHALL HAVE A MINIMUM OF 4" CLEARANCE FROM THE BOTTOM OF THE VALVE BOX, LID, AND 2" MINIMUM CLEARANCE FROM THE BOTTOM OF VALVE AND TOP OF GRAVEL SUMP.

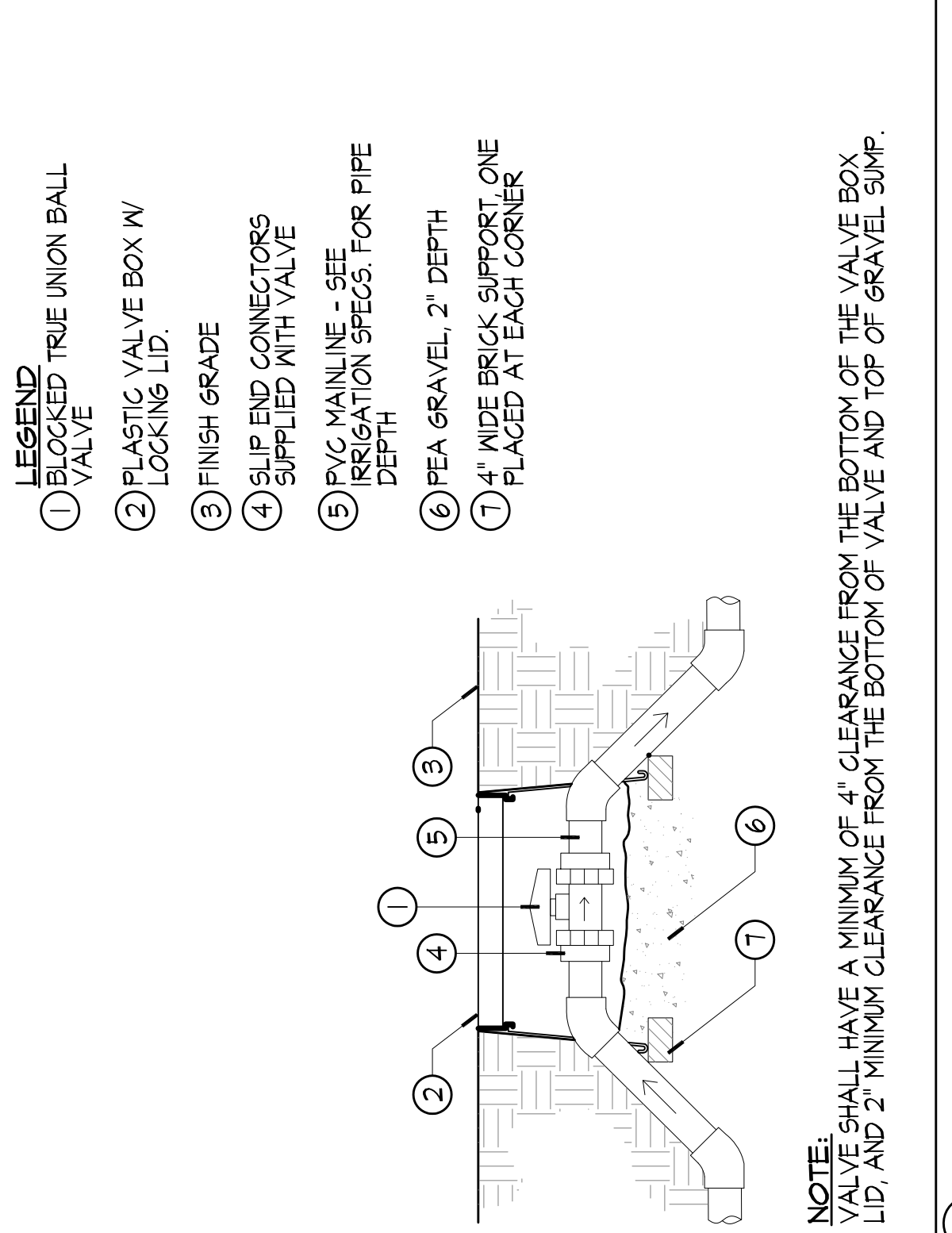
**SCALE: N.T.S.**



- LEGEND**
- 1 FINISH GRADE
  - 2 PLASTIC VALVE BOX W/ LOCKING LID
  - 3 8" DIA. CL. 160 PVC SLEEVE BOTTOM TO BE FLARED AND CONTACT TOP OF PRESSURE SUPPLY LINE
  - 4 FLOW SENSOR, REFER TO LEGEND FOR MODEL AND SIZE REQUIRED
  - 5 PVC REDUCING COUPLER (2) REQUIRED
  - 6 PVC MAINLINE
  - 7 WATERPROOF CONNECTIONS WITH ELECTRICAL CONDUIT TO THE MASTER CONTROLLER
  - 8 CONTROL WIRE WITH 30" EXPANSION COIL
  - 9 3/4" GRAVEL SUMP (ONE CUBIT FOOT)
  - 10 8X PIPE DIA. MIN. DOWSTREAM
  - 11 10X PIPE DIA. MIN. UPSTREAM
  - 12 BRICK SUPPORT

**NOTE:**  
1. ALL SLEEVES TO BE THREE DIAMETER OF PIPE (PER SPECIFICATIONS).  
2. NO REINFORCING STEEL IS PERMITTED PERPENDICULAR AND OVER CONCRETE BROW DITCHES.

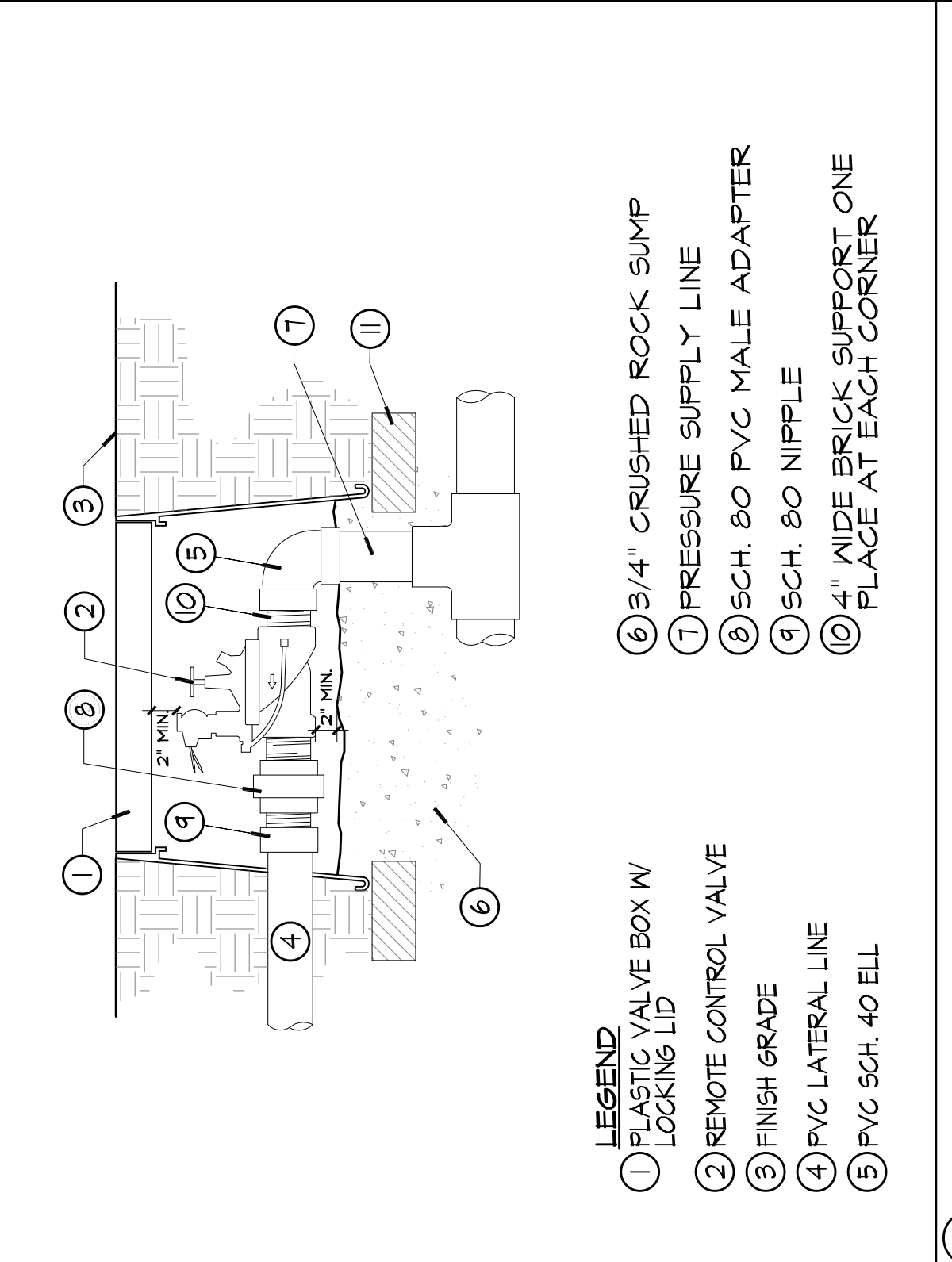
**SCALE: N.T.S.**



- LEGEND**
- 1 LOCKED TRUE UNION BALL VALVE
  - 2 PLASTIC VALVE BOX W/ LOCKING LID
  - 3 FINISH GRADE
  - 4 SLIP END CONNECTORS SUPPLIED WITH VALVE
  - 5 PVC MAINLINE - SEE IRRIGATION SPECS. FOR PIPE DEPTH
  - 6 PEA GRAVEL, 2" DEPTH
  - 7 4" WIDE BRICK SUPPORT, ONE PLACED AT EACH CORNER

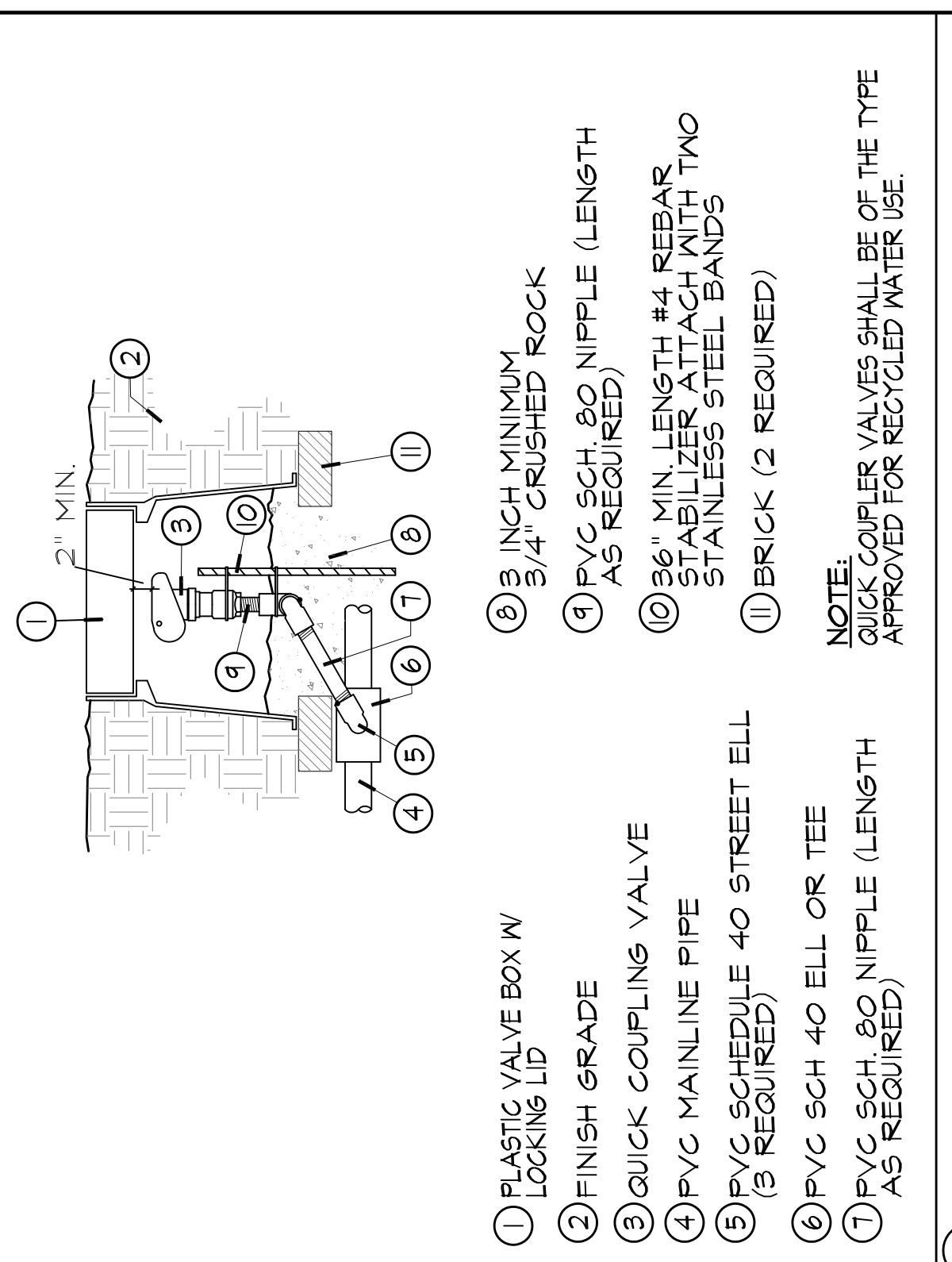
**NOTE:**  
VALVE SHALL HAVE A MINIMUM OF 4" CLEARANCE FROM THE BOTTOM OF THE VALVE BOX, LID, AND 2" MINIMUM CLEARANCE FROM THE BOTTOM OF VALVE AND TOP OF GRAVEL SUMP.

**SCALE: N.T.S.**



- LEGEND**
- 1 PLASTIC VALVE BOX W/ LOCKING LID
  - 2 REMOTE CONTROL VALVE
  - 3 FINISH GRADE
  - 4 PVC LATERAL LINE
  - 5 PVC SCH. 40 ELL

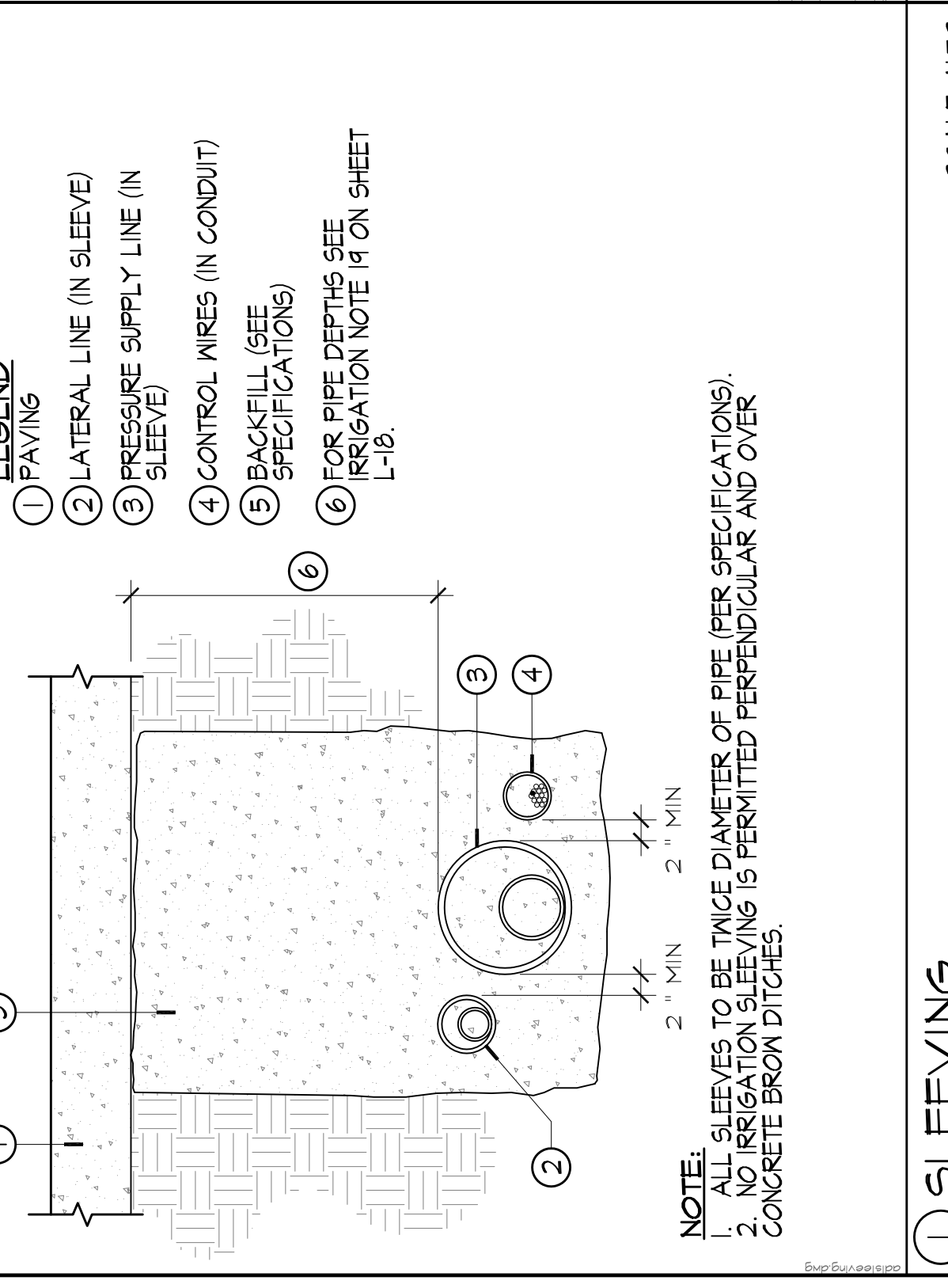
**SCALE: N.T.S.**



- LEGEND**
- 1 PLASTIC VALVE BOX W/ LOCKING LID
  - 2 FINISH GRADE
  - 3 QUICK COUPLING VALVE
  - 4 PVC MAINLINE PIPE
  - 5 PVC SCHEDULE 40 STREET ELL (5 REQUIRED)
  - 6 PVC SCH. 40 ELL OR TEE
  - 7 PVC SCH. 80 NIPPLE (LENGTH AS REQUIRED)

**NOTE:**  
QUICK COUPLER VALVES SHALL BE OF THE TYPE APPROVED FOR RECYCLED WATER USE.

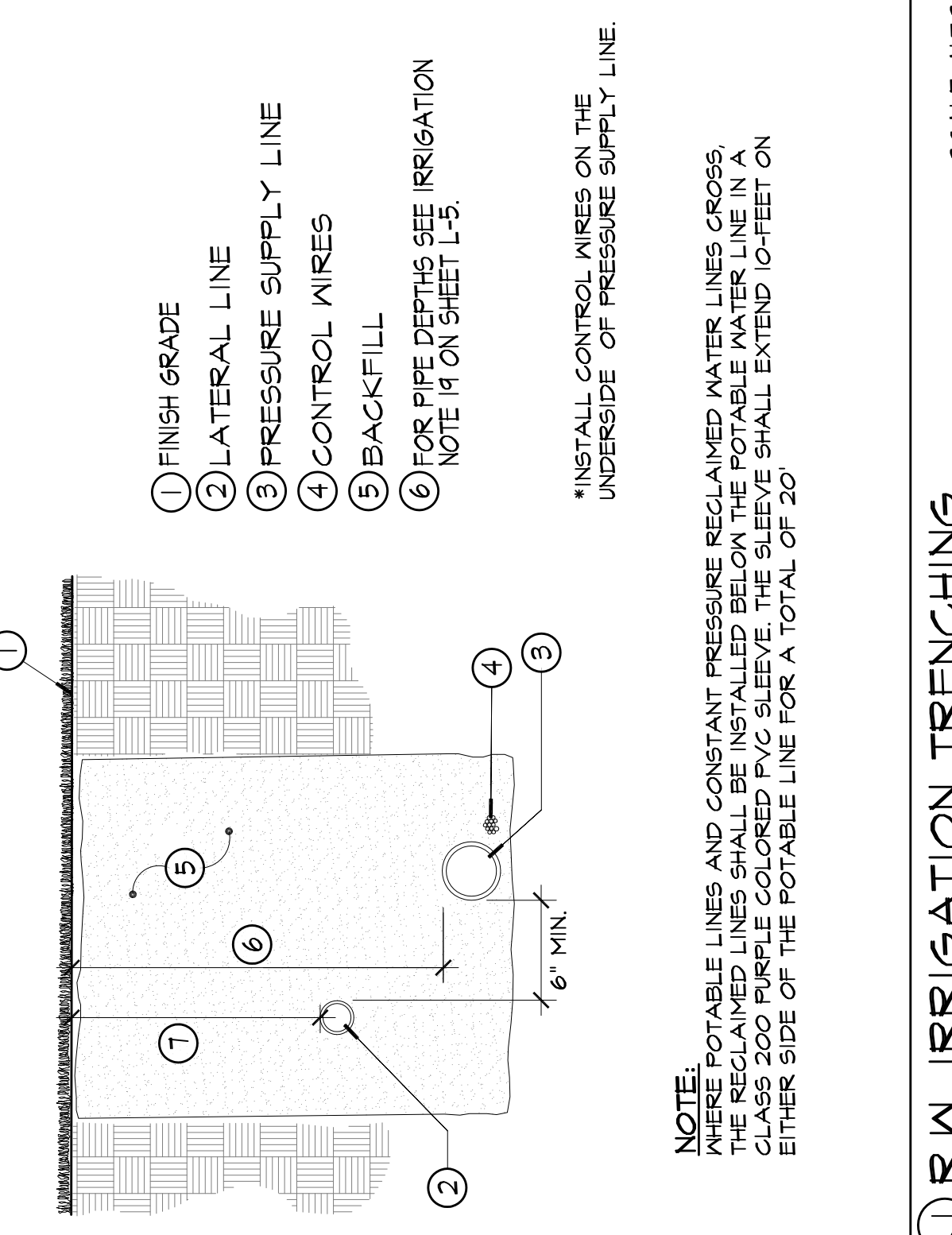
**SCALE: N.T.S.**



- LEGEND**
- 1 PAVING
  - 2 LATERAL LINE (IN SLEEVE)
  - 3 PRESSURE SUPPLY LINE (IN SLEEVE)
  - 4 CONTROL WIRES (IN CONDUIT)
  - 5 BACKFILL (SEE SPECIFICATIONS)
  - 6 FOR PIPE DEPTHS SEE IRRIGATION NOTE 14 ON SHEET L-1B.

**NOTE:**  
1. ALL SLEEVES TO BE THREE DIAMETER OF PIPE (PER SPECIFICATIONS).  
2. NO REINFORCING STEEL IS PERMITTED PERPENDICULAR AND OVER CONCRETE BROW DITCHES.

**SCALE: N.T.S.**

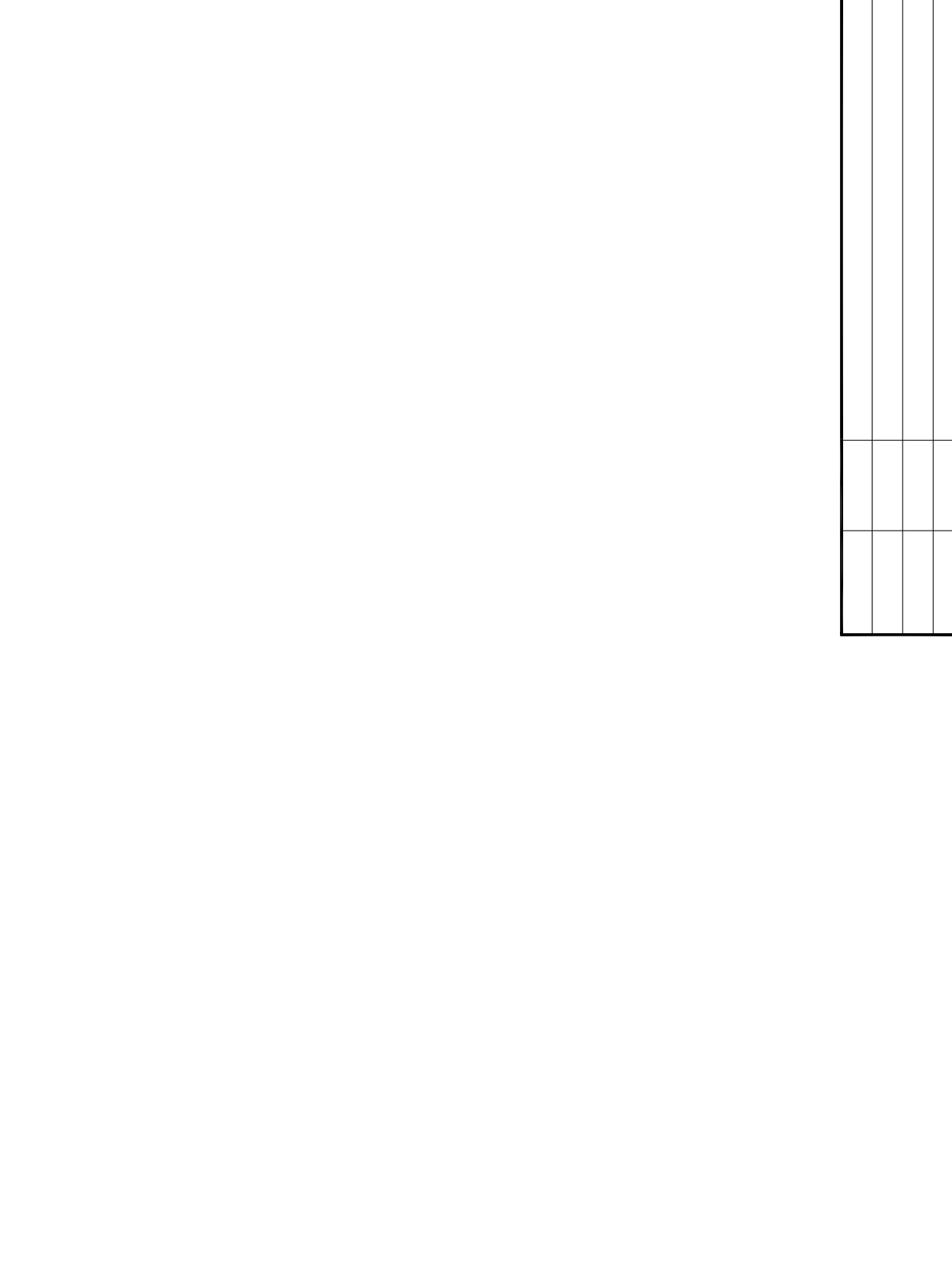


- LEGEND**
- 1 FINISH GRADE
  - 2 LATERAL LINE
  - 3 PRESSURE SUPPLY LINE
  - 4 CONTROL WIRES
  - 5 BACKFILL
  - 6 FOR PIPE DEPTHS SEE IRRIGATION NOTE 14 ON SHEET L-5.

**NOTE:**  
WHERE POTABLE LINES AND CONSTANT PRESSURE RECLAIMED WATER LINES CROSS, THE RECLAIMED LINES SHALL BE INSTALLED BELOW THE POTABLE WATER LINE IN A CLASS 200 PURPLE COLORED PVC SLEEVE. THE SLEEVE SHALL EXTEND 10-FEET ON EITHER SIDE OF THE POTABLE LINE FOR A TOTAL OF 20'

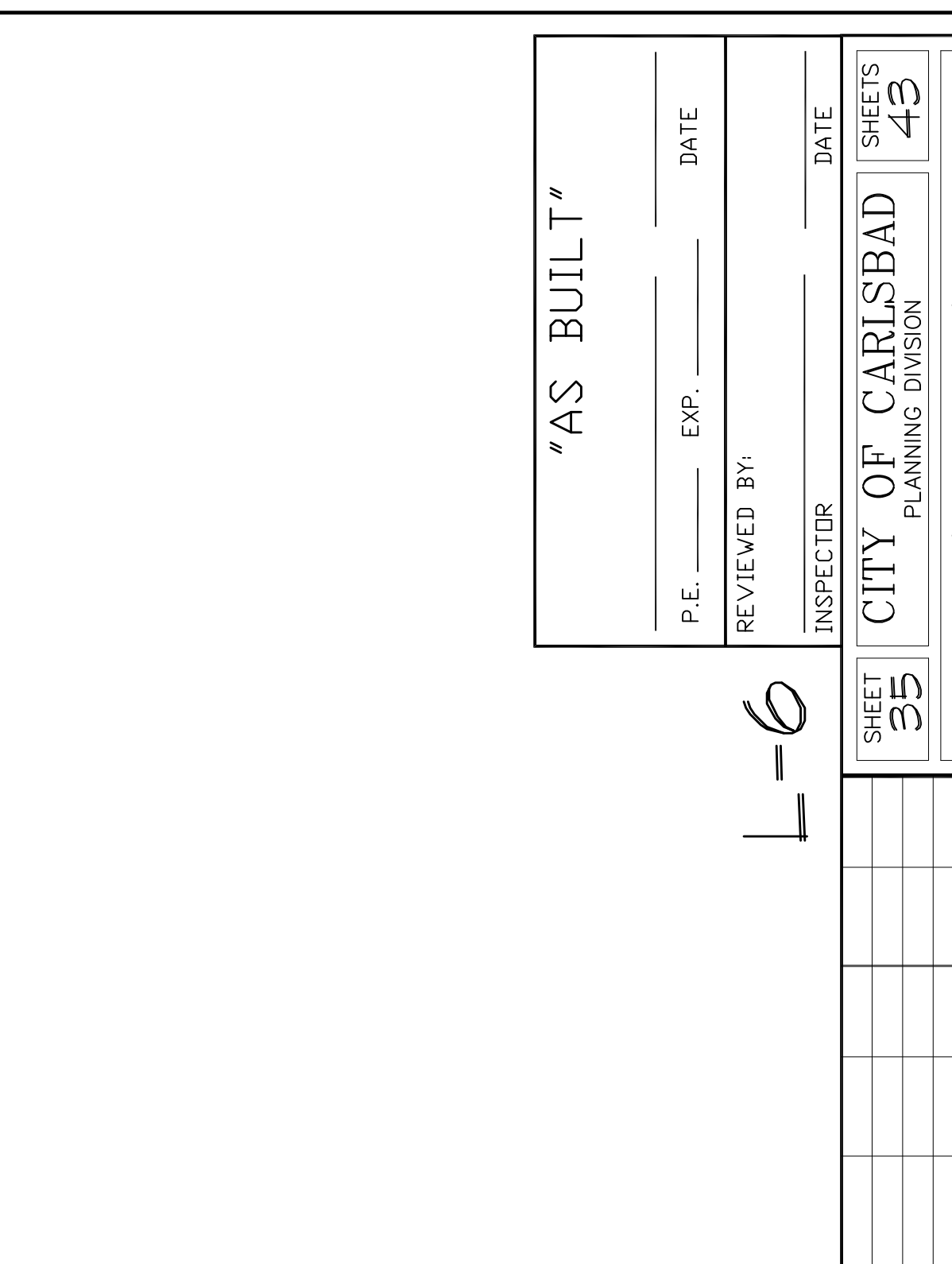
\*INSTALL CONTROL WIRES ON THE UNDERSIDE OF PRESSURE SUPPLY LINE.

**SCALE: N.T.S.**



- LEGEND**
- 1 PLASTIC VALVE BOX W/ LOCKING LID
  - 2 PRESSURE REGULATOR
  - 3 FINISH GRADE
  - 4 TO POINT OF CONNECTION
  - 5 PVC MAINLINE
  - 6 PEA GRAVEL (2" DEPTH)
  - 7 BRICK SUPPORT (4" MIN.) ONE AT EACH OTHER
  - 8 PVC UNION
  - 9 NATIVE SUBGRADE
  - 10 PVC NIPPLE
  - 11 MALE ADAPTER
  - 12 8" PIPE MAINLINE DEPTH

**SCALE: N.T.S.**



- LEGEND**
- 1 PLASTIC VALVE BOX W/ LOCKING LID
  - 2 ELECTRIC REMOTE CONTROL VALVE
  - 3 FINISH GRADE
  - 4 PRESSURE SUPPLY LINE
  - 5 UNION
  - 6 PVC SCH. 40 45 DEGREE FITTING FOUR (4) REQUIRED
  - 7 3/4" CRUSHED ROCK SUMP
  - 8 SCH. 80 NIPPLE (TYP)
  - 9 4" WIDE BRICK SUPPORT, ONE PLACED AT EACH CORNER

**SCALE: N.T.S.**

SEE SHEET L-2 - L-4 FOR IRRIGATION PLANS  
SEE SHEET L-5 FOR IRRIGATION LEGENDS & NOTES  
SEE SHEET L-6 & L-7 FOR IRRIGATION DETAILS

**DIGALERT**  
LANDSCAPE ARCHITECTURE  
2979 STATE STREET SUITE "C"  
CARLSBAD, CA 92008  
TEL: (619) 735-8317 FAX: (619) 735-8314

**ADL PLANNING ASSOCIATES**  
DATE: \_\_\_\_\_  
JOB NO: \_\_\_\_\_  
SCALE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_

**CITY OF CARLSBAD**  
PLANNING DIVISION

**ROADWAY IMPROVEMENTS**  
EL CAMINO REAL  
FROM SUNNY CREEK RD TO JACKSPAR DR

APPROVED: *Hossein Ajdeh* 2/16/2024  
ENGINEERING MANAGER  
PROJECT NO. 6094  
DRAWING NO. DWG 529-1-1

DATE: \_\_\_\_\_ INITIAL: \_\_\_\_\_  
DATE: \_\_\_\_\_ INITIAL: \_\_\_\_\_  
DATE: \_\_\_\_\_ INITIAL: \_\_\_\_\_  
DATE: \_\_\_\_\_ INITIAL: \_\_\_\_\_

REVISION DESCRIPTION

ENGINEER OF WORK: \_\_\_\_\_  
DATE: \_\_\_\_\_ INITIAL: \_\_\_\_\_  
DATE: \_\_\_\_\_ INITIAL: \_\_\_\_\_  
DATE: \_\_\_\_\_ INITIAL: \_\_\_\_\_

**INSPECTOR** \_\_\_\_\_ DATE: \_\_\_\_\_  
**REVIEWED BY:** \_\_\_\_\_ DATE: \_\_\_\_\_  
**P.E.** \_\_\_\_\_ DATE: \_\_\_\_\_

**"AS BUILT"**

**L-6**

SHEET 35 SHEETS 43



**LEGEND**

- 1 PVC BLACK CAP/SANICUT TOP TO ALLOW FOR SURFACE FLOODING DO NOT CEMENT CAP TO DRAIN PIPE (SET MIN. 1" ABOVE MULCH)
- 2 BUBBLER HEAD
- 3 FINISH GRADE
- 4 1/2" SCH 80 PVC NIPPLE
- 5 6" PERFORATED PVC DRAIN PIPE FILL WITH 3/8" IN. TALL CRUSHED GRAVEL. TUBING ON SLOPES WITH WATERING
- 6 PVC LATERAL PIPE
- 7 3" LAYER OF MULCH

NOT USED

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**LEGEND**

- 1 POP-UP SPRAY HEAD
- 2 FINISH GRADE
- 3 PVC FITTINGS
- 4 SCH. 80 PVC NIPPLE
- 5 CHECK VALVE IF REQUIRED
- 6 90° ELL
- 7 STREET ELL
- 8 PVC SUPPLY LINE
- 9 WALK, CURB, HEADER, ETC.
- 10 VARIES - ALLOW 12" FROM ANY VERTICAL SURFACES AND 2" TYPICAL AT ALL OTHER LOCATIONS.

NOTE: JOINT NIPPLES AND ELLS ARE TO BE THE SAME SIZE AS THE INLET AT HEAD.

NOT USED

**(K) SUBSURFACE TREE BUBLER** N.T.S.

NOT USED

**(L) 12" POP-UP SPRAY (SHRUBS)** N.T.S.

- 1 FINISH GRADE
- 2 FLUSH CAP FOR EASY FIT COMPRESSION FITTINGS. POTABLE: RAIN BIRD MDCFCAP
- 3 EASY FIT COUPLING: RAIN BIRD MDCFCOUP
- 4 PLASTIC VALVE BOX:
- 5 SUB-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE
- 6 POTABLE: XFS DRIPLINE
- 7 3/4-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
- 8 BRICK (1 OF 2)

NOTE:  
1. ALLOW A MINIMUM OF 6-INCHES OF DRIPLINE TUBING IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE

---

**(M) OPERATION INDICATOR** N.T.S.

- 1 WALK, CURB, HEADER, ETC.
- 2 FINISH GRADE
- 3 POP-UP INDICATOR. SHALL BE PLACE ON A VISIBLE AREA
- 4 1/2"x3/8" SCH. 80 PVC NIPPLE WITH THREE STREET ELLS
- 5 PVC FITTING AS NEEDED
- 6 PVC DRIP LATERAL SUPPLY LINE

**(N) AIR RELIEF VALVE** N.T.S.

- 1 FINISH GRADE
- 2 PLASTIC VALVE BOX W/ LOCKING LID
- 3 1/2" AIR RELIEF VALVE: RAIN BIRD ARVOSO TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE
- 4 PVC SCH 40 FEMALE ADAPTER
- 5 PVC SCH 80 RISER
- 6 BRICK (1 OF 2)
- 7 PVC HEADER PIPE
- 8 PVC SCH 40 TEE
- 9 3" MINIMUM DEPTH OF 3/4" WASHED GRAVEL

NOTE:  
1. AIR RELIEF VALVE MUST BE LOCATED AT HIGHEST ELEVATIONS OF CIRCUIT.  
2. PROVIDE AS NEEDED AND AS PER MANUFACTURER'S RECOMMENDATIONS.

**(O) FLUSH VALVE AND CAP** N.T.S.

- 1 PVC EXHAUST HEADER
- 2 PVC SCH 40 TEE OR EL (TYPICAL)
- 3 BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
- 4 FLUSH POINT (TYPICAL). SEE RAIN BIRD DETAIL "XFC FLUSH POINT"
- 5 PERIMETER OF AREA
- 6 PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
- 7 DRIPLINE:
- 8 PVC SUPPLY HEADER
- 9 PVC DRIP MANIFOLD FROM RAIN BIRD CONTROL ZONE VALVE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
- 10 PVC SCH 40 RISER PIPE

Dripline Maximum Lateral Lengths			
Inlet Pressure psi	12" Spacing (Feet)		Nominal Flow (gph)
	Nominal Flow (gph)	18" Spacing	
20	192	136	254
30	284	205	402
40	350	248	498
50	347	281	573
60	436	309	637
			524

NOTE: DRIPLINE TO BE BURIED UNDER 3 TO 4 INCHES OF MULCH.  
2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM SPACING SHOWN IN THE ACCOMPANYING TABLE.  
3. WHEN USING ITMM INSERT FITTINGS WITH DESIGN PRESSURE OVER 80PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.

**(P) AIR RELIEF VALVE** N.T.S.

SEE SHEET L-2 - L-4 FOR IRRIGATION PLANS  
SEE SHEET L-5 FOR IRRIGATION LEGENDS & NOTES  
SEE SHEET L-6 & L-7 FOR IRRIGATION DETAILS

"AS BUILT"

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_  
REVIEWED BY: \_\_\_\_\_  
INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

L-7

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**(Q) DRIP IRRIGATION** N.T.S.

**(R) OPERATION INDICATOR** N.T.S.

**(S) DRIP IRRIGATION** N.T.S.

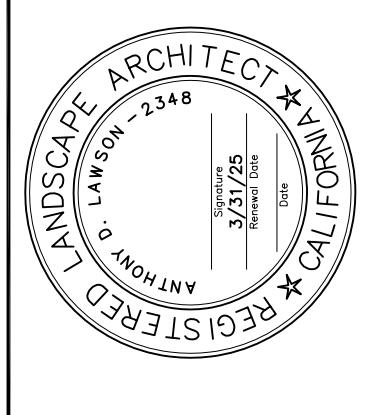
**(T) CITY OF CARLSBAD** PLANNING DIVISION

SHEET 36 SHEETS 43

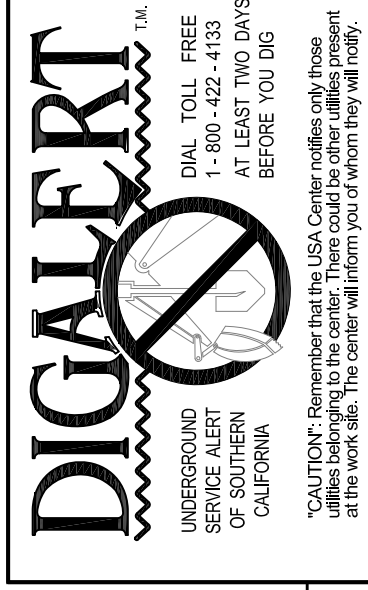
LANDSCAPE IMPROVEMENT PLANS FOR:  
**EL CAMINO REAL ROADWAY IMPROVEMENTS**  
FROM SUNNY CREEK Rd TO JACKSPAR DR

APPROVED: *Hossein Ajideh* HOSSEIN AJIDEH 2/16/2024  
ENGINEERING MANAGER RCE 75991. EXPIRES 6/30/24 DATE

DWN BY: \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. DWG 529-1  
CHKD BY: \_\_\_\_\_ R/WMD BY: \_\_\_\_\_

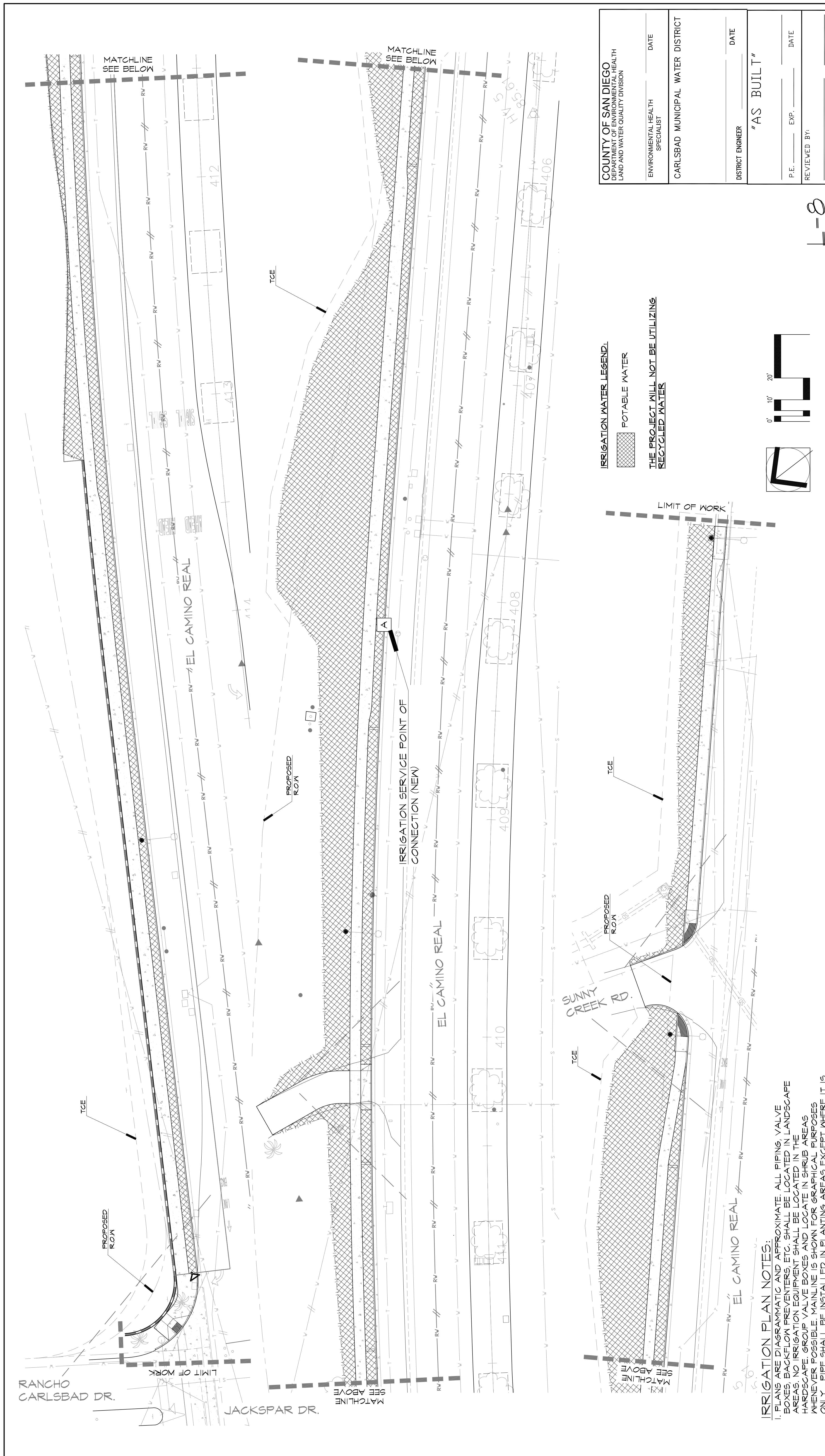


**ADL PLANNING ASSOCIATES**  
LANDSCAPE ARCHITECTURE  
2979 STATE STREET SUITE "C"  
CARLSBAD, CA 92008  
TEL: (619) 733-8817 FAX: (619) 733-8324



SV\PROJECTS\2021\EL-Camino-Improvements-irrigation-Support\dwg - Irrigation - Support.dwg - Tuesday, Apr 16, 2024 1:58pm - cation

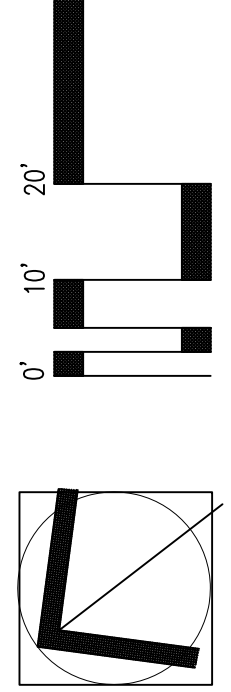




IRRIGATION WATER LEGEND:

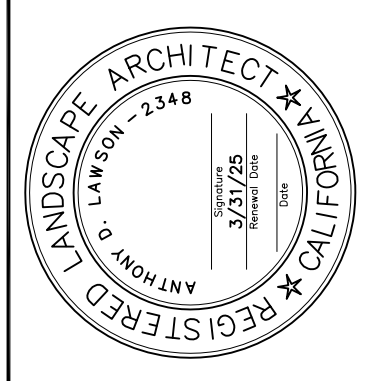


THE PROJECT WILL NOT BE UTILIZING RECYCLED WATER

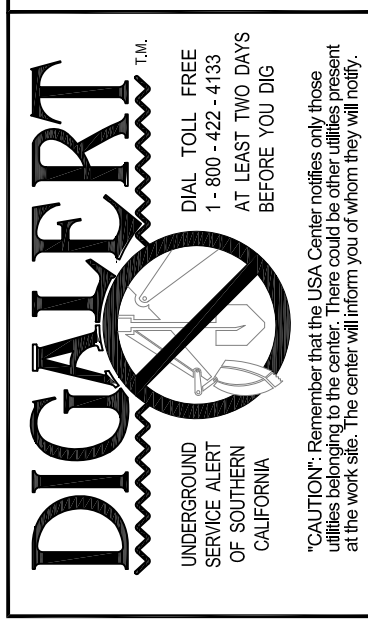


L-8

SHEET 37	CITY OF CARLSBAD PLANNING DIVISION	SHEETS 43
LANDSCAPE IMPROVEMENT PLANS FOR: <b>EL CAMINO REAL ROADWAY IMPROVEMENTS</b> FROM SUNNY CREEK RD TO JACKSPAR DR		
APPROVED:	HOSSEIN AJUDEH	DATE 2/16/2024
ENGINEERING MANAGER	RCE 75991	EXPIRES 6/30/24
DWN BY:	PROJECT NO. 6094	DRAWING NO. DWG 529-1
CHKD BY:		
RVD BY:		
INSPECTOR	DATE	
REVIEWED BY:	DATE	
P.E.	EXP.	DATE
DISTRICT ENGINEER	"AS BUILT"	DATE
SPECIALIST		
ENVIRONMENTAL HEALTH		
COUNTY OF SAN DIEGO DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION		



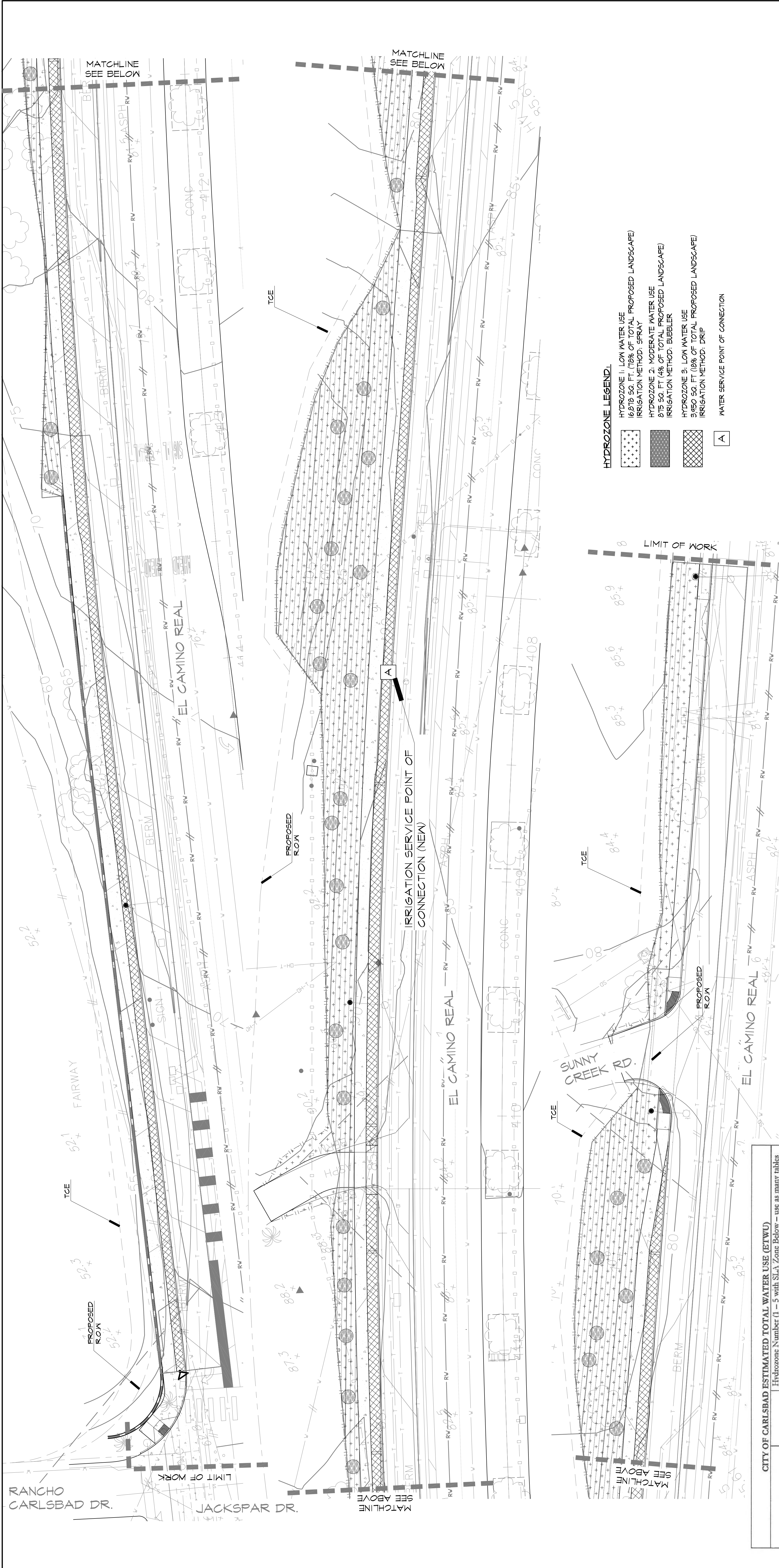
**ADL PLANNING ASSOCIATES**  
LANDSCAPE ARCHITECTURE  
2979 STATE STREET SUITE "C"  
CARLSBAD, CA 92006  
TEL: (609) 713-8117 FAX: (609) 713-8124



- IRRIGATION PLAN NOTES:**
- PLANS ARE DIAGRAMMATIC AND APPROXIMATE. ALL PIPING, VALVE BOXES, BACKFLOW PREVENTERS, ETC. SHALL BE LOCATED IN LANDSCAPE AREAS. NO IRRIGATION EQUIPMENT SHALL BE LOCATED IN THE HARDSCAPE. GROUP VALVE BOXES AND LOCATE IN SHRUB AREAS WHENEVER POSSIBLE. MAINLINE IS SHOWN FOR GRAPHICAL PURPOSES ONLY. PIPE SHALL BE INSTALLED IN PLANTING AREAS EXCEPT WHERE IT IS INFEASIBLE AND OUT OF ANY EASEMENTS.
  - SLEEVES SHALL BE TWO TIMES THE DIAMETER OF THE PIPE.
  - ANTI-DRAIN VALVES SHALL BE INSTALLED AS REQUIRED TO PREVENT ALL LOW HEAD DRAINAGE.

SEE SHEET L-2 - L-4 FOR IRRIGATION PLANS  
SEE SHEET L-5 FOR IRRIGATION LEGENDS & NOTES  
SEE SHEET L-6 & L-7 FOR IRRIGATION DETAILS





- HYDROZONE LEGEND:**
- HYDROZONE 1: LOW WATER USE  
16,819 SQ. FT. (18% OF TOTAL PROPOSED LANDSCAPE)  
IRRIGATION METHOD: SPRAY
  - HYDROZONE 2: MODERATE WATER USE  
819 SQ. FT. (4% OF TOTAL PROPOSED LANDSCAPE)  
IRRIGATION METHOD: BUBBLER
  - HYDROZONE 3: LOW WATER USE  
9,850 SQ. FT. (18% OF TOTAL PROPOSED LANDSCAPE)  
IRRIGATION METHOD: DRIP
  - A WATER SERVICE POINT OF CONNECTION

"AS BUILT"

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ DATE \_\_\_\_\_

INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

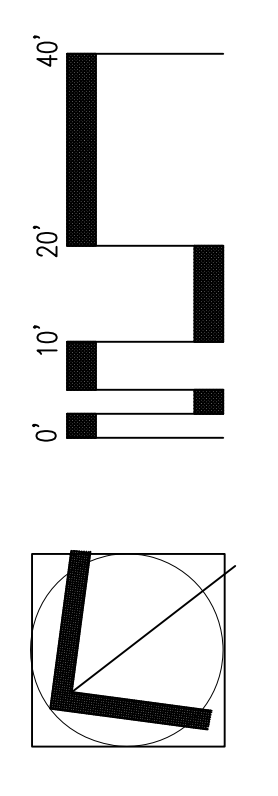
SHEET 38 CITY OF CARLSBAD PLANNING DIVISION SHEETS 43

LANDSCAPE IMPROVEMENT PLANS FOR:  
**EL CAMINO REAL ROADWAY IMPROVEMENTS**  
FROM SUNNY CREEK RD TO JACKSPAR DR

APPROVED: *Hossein Ajideh* HOSSEIN AJIDEH  
ENGINEERING MANAGER RCE 75991 EXPIRES 6/30/24 DATE 2/16/2024

DWN BY: \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. DWG 529-1

CHKD BY: \_\_\_\_\_ R/WMD BY: \_\_\_\_\_



SEE SHEET L-2 - L-4 FOR IRRIGATION PLANS  
SEE SHEET L-5 FOR IRRIGATION LEGENDS & NOTES  
SEE SHEET L-6 & L-7 FOR IRRIGATION DETAILS

**MAWA CALCULATION**

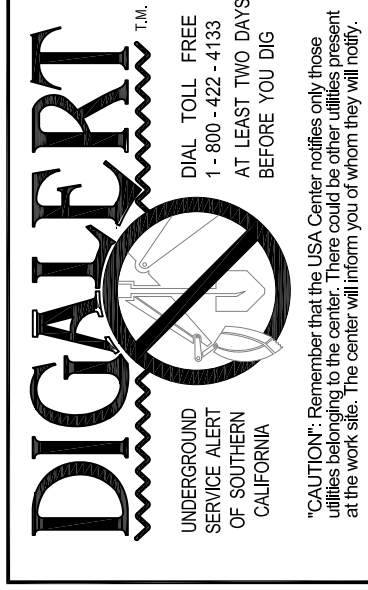
$$\text{MAWA} = (E10)/(0.62) [(0.45)(LA) + (0.55)(SLA)]$$

$$= (47)/(0.62) [(0.45)(21,700) + (0.55)(0)]$$

$$= (29,164) (9,165 + 0)$$

$$= 284,552.1 \text{ GALLONS PER YEAR}$$

CITY OF CARLSBAD ESTIMATED TOTAL WATER USE (ETWU)									
Hydrozone Number (1 - 5 with SLA Zone Below - use as many tables as necessary to complete all hydrozones)									
Evapotranspiration Rate (ET10)*	Process Step No. (Below)	1	2	3	4	5	SLA		
	Conversion Factor							47.0	
	(Step 1 x Step 2)							0.62	
	Plant Factor (PF)** (From WUCOLS) (VLW - HW) (0.1 - 0.8)							29.14	
	Area of Hydrozone (sq. ft.) (HA)	0.3	0.5	0.3	875	3,950			
	(Step 4 x Step 5)	5,062.5	437.5	1,185					
	Irrigation Efficiency (IE)***	.75	.8	.75					
	(Step 6 - Step 7)	6,750	546.875	1,580					
	(Total All Step 8 + Total Step 9)							8,875.875	
	(Step 3 x Step 9) Estimated Total Water Use in gallons per year (ETWU) - Total shall not exceed MAWA							258,672.13	



**ADL PLANNING ASSOCIATES**

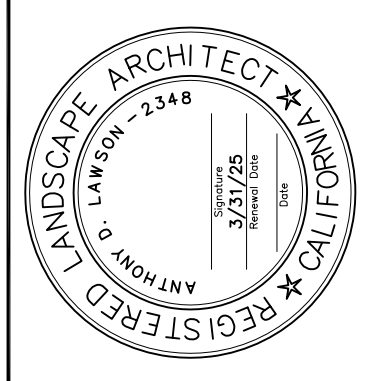
LANDSCAPE ARCHITECTURE

2979 STATE STREET SUITE "C"  
CARLSBAD, CA 92008

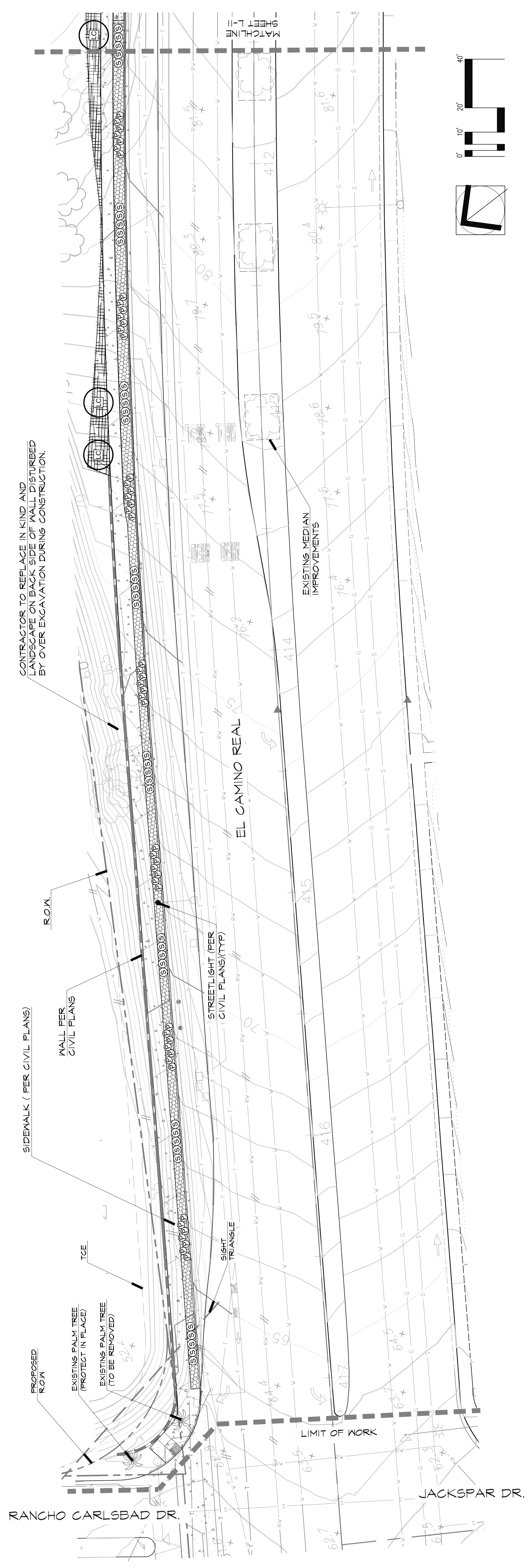
DATE: \_\_\_\_\_ JOB NO: \_\_\_\_\_  
SCALE: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_

REGISTERED LANDSCAPE ARCHITECT  
NO. 14988 - 2148  
3/2/25  
CALIFORNIA

PHONE: (619) 435-8811 FAX: (619) 435-8314







CONTRACTOR TO REPLACE IN KIND AND LANDSCAPE ON BACK SIDE OF WALL DISTURBED BY OVER EXCAVATION DURING CONSTRUCTION.

SIDEWALK (PER CIVIL PLANS)

WALL PER CIVIL PLANS

STREETLIGHT (PER CIVIL PLANS/TYP)

EXISTING MEDIAN IMPROVEMENTS

PROPOSED R.O.W

EXISTING PALM TREE (PROTECT IN PLACE)

EXISTING PALM TREE (TO BE REMOVED)

TCE

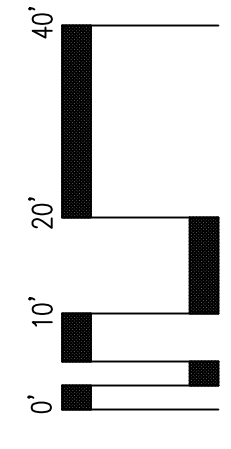
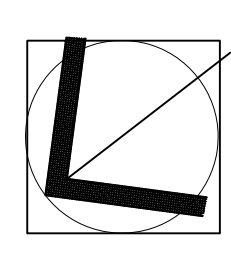
SIGHT TRIANGLE

LIMIT OF WORK

RANCHO CARLSBAD DR.

JACKSPAR DR.

TREE MITIGATION NOTE:  
1. PER CITY OF CARLSBAD, ANY REMOVAL OF CITY OWNED TREES WILL NEED TO BE REPLACED AT A RATE OF TWO TREES FOR EVERY ONE TREE REMOVED.

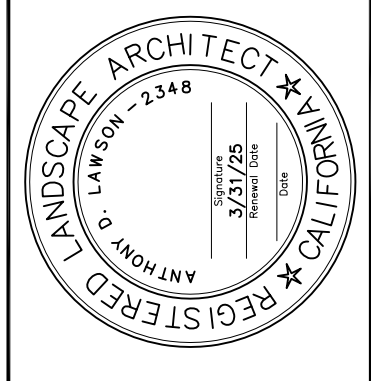
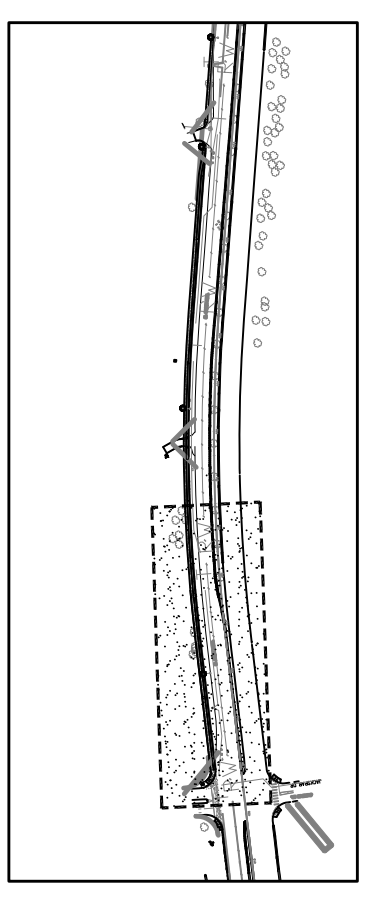


Approval and review table with columns: P.E., EXP., DATE, REVIEWED BY, INSPECTOR, DATE.

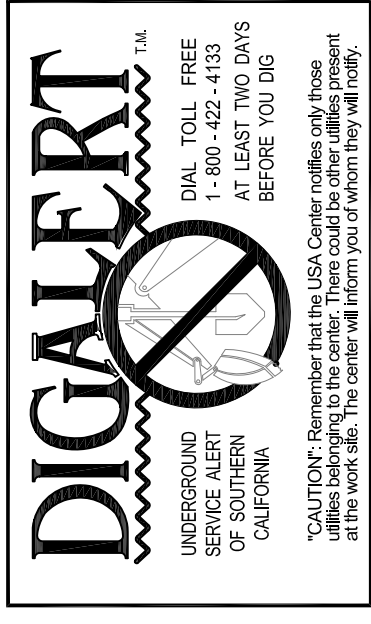
INSPECTOR: CITY OF CARLSBAD PLANNING DIVISION  
REVIEWED BY: L-10  
DATE: SHEETS 43

Revision table with columns: REVISION DESCRIPTION, DATE, INITIAL, ENGINEER OF WORK, CITY APPROVAL.

KEY MAP

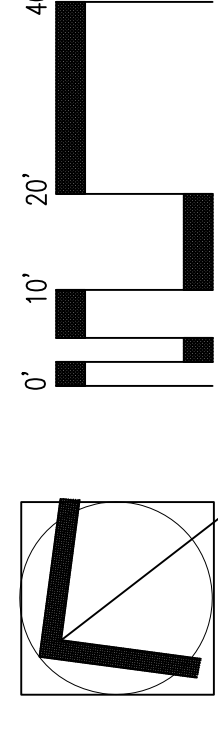


ADL PLANNING ASSOCIATES  
LANDSCAPE ARCHITECTURE  
2979 STATE STREET SUITE "C"  
CARLSBAD, CA 92008  
TEL: (760) 728-8637 FAX: (760) 728-8324

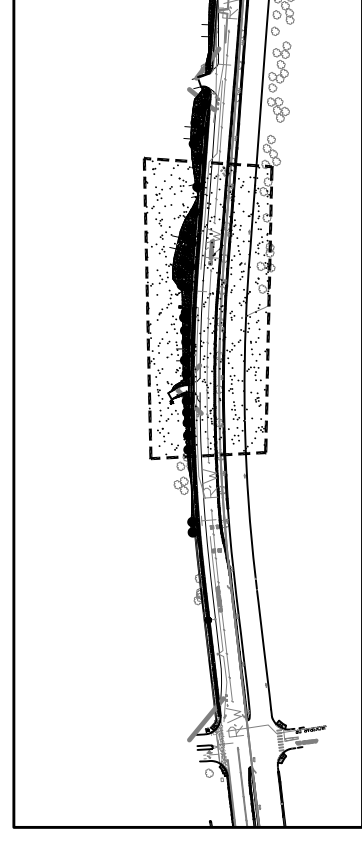


SEE SHEETS L-10 - L-12 FOR PLANTING PLANS  
SEE SHEET L-13 FOR PLANTING LEGENDS & NOTES  
SEE SHEET L-14 FOR PLANTING DETAILS





KEY MAP



**"AS BUILT"**

P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

SHEET **40** CITY OF CARLSBAD PLANNING DIVISION SHEETS **43**

LANDSCAPE IMPROVEMENT PLANS FOR:  
**EL CAMINO REAL ROADWAY IMPROVEMENTS**  
 FROM SUNNY CREEK Rd TO JACKSPAR Dr

APPROVED: *Hossein Ajdadi* HOSSEIN AJDADI 2/18/2024  
 ENGINEERING MANAGER RCE 75991 EXPIRES 6/30/24 DATE \_\_\_\_\_  
 DWN BY: \_\_\_\_\_ PROJECT NO. \_\_\_\_\_ DRAWING NO. \_\_\_\_\_  
 CHKD BY: \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. \_\_\_\_\_  
 RWMD BY: \_\_\_\_\_ PROJECT NO. 6094 DWG 529-1

REVISION DESCRIPTION	ENGINEER OF WORK	DATE	INITIAL	DATE	INITIAL	OTHER APPROVAL	CITY APPROVAL



**ADL PLANNING ASSOCIATES**  
 L.A.N.D.S.C.A.P.E.  
 LANDSCAPE ARCHITECTURE  
 2979 STATE STREET SUITE "C"  
 CARLSBAD, CA 92008 (760) 728-8637 FAX: (760) 728-8324

DATE: \_\_\_\_\_ JOB NO: \_\_\_\_\_  
 SCALE: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_

**DIGALERT**  
 DIGITAL ALERT SYSTEM  
 AT LEAST TWO DAYS BEFORE YOU DIG  
 OF SOUTHERN CALIFORNIA  
 "CAUTION" Remember that the USA Center of Excellence only those at the work site. This center will inform you of what you will dig.

SEE SHEETS L-10 - L-12 FOR PLANTING PLANS  
 SEE SHEET L-13 FOR PLANTING LEGENDS & NOTES  
 SEE SHEET L-14 FOR PLANTING DETAILS







**PLANTING LEGEND**

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	MUGOLS	COMMENTS
			BRISBANE BOX	15 GAL.	MODERATE	CITY MAINTAINED AND IN CITY R/W
31		LOPHOSTEMON CONFERTUS				

**SLOPE SHRUB PALETTE**

(R)	17	RHUS INTEGRIFOLIA	LEMONADE BERRY	5 GAL.	VERY LOW	-
(E)	24	ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT	1 GAL.	VERY LOW	-

**RAIN GARDEN PALETTE**

095		JUNCUS PATENS	CALIFORNIA GREY RUSH	1 GAL.	LOW	PLANT 18" O.C.
115		BOUJELQIA GRACILIS	BLUE GRAMA	1 GAL.	LOW	PLANT 18" O.C.

**PARKWAY SHRUBS & GROUND COVER**

75		SALVIA GREGGII	AUTUMN SAGE	1 GAL.	LOW	-
84		PHORMIUM TENAX	TOM THUMB	1 GAL.	LOW	-
2845		MYOPORIUM PARVIFOLIUM	CREEPING MYOPORIUM	FLATS	LOW	PLANT 24" O.C.

**HYDROSEED MIXTURE**

**HYDROSEED MIX "A" - 14,250 s.f.**

BOTANICAL NAME	COMMON NAME	LBs./ACRE
TRIFOLIUM HIRTUM	ROSE CLOVER	20
FESTUCA MEGALURA	ZORRO FESCUE	20
ESCHSCHOLZIA CALIFORNICA	CALIFORNIA POPPY	3
ACHILLEA MILLEFOLIA	COMMON YARROW	4
ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT	3
ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	3
ALYSSUM	CARPET OF SNOW	3
DIMORPHOLECA	GENUS OF PLANTS IN SUNFLOWER FAMILY	2

**HYDROSEED NOTES:**

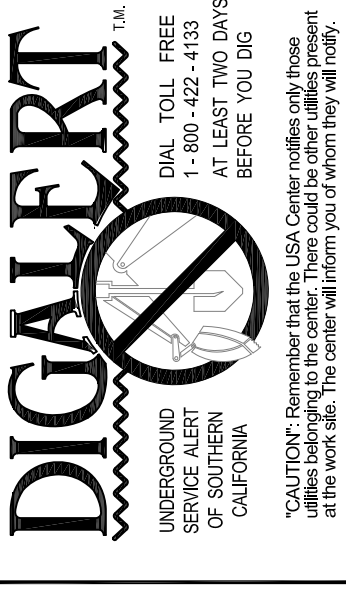
- HYDROSEED MIX "A" SHALL BE APPLIED TO SLOPES OUTSIDE OF THE STREET RIGHT-OF-WAY DISTURBED BY GRADING.
- ROSE CLOVER SHALL BE INOCULATED WITH WITH A NITROGEN FIXING BACTERIA AND BE APPLIED EITHER BY DRILLING OR BROADCASTING IMMEDIATELY BEFORE HYDRAULIC APPLICATION OF THE REMAINING SEED MIX AND MULCH.

**TREE MITIGATION NOTE:**

- CITY OWNED AND MAINTAINED TREES BEING REMOVED SHALL BE REPLACED AT A RATE OF TWO TREES PER EVERY ONE TREE REMOVED.

**PLANTING NOTES:**

- THE PLANTING PLAN IS DIAGRAMMATIC AND SHALL BE USED AS A GUIDE FOR SETTING OUT PLANTS. PRIOR TO PLANTING, THE LANDSCAPE ARCHITECT SHALL BE CONTACTED TO APPROVE ALL PLANT LOCATIONS AND DIRECT ADJUSTMENTS.
- PLANT MATERIALS SHALL CONFORM TO NURSERYMAN'S STANDARDS FOR SIZE AND HEALTH. ALL PLANTS ARE SUBJECT TO REJECTION BY THE LANDSCAPE ARCHITECT IN SUBSTANDARD IN SIZE, QUALITY, OR HEALTH.
- PROVIDE WATERPROOF SPECIES IDENTIFICATION TAGS ON ONE PLANT PER SPECIES PER GROUPING.
- PLANT COUNTS ARE FOR THE CONVENIENCE OF THE LANDSCAPE CONTRACTOR ONLY. CONTRACTOR IS RESPONSIBLE FOR ALL PLANTS SHOWN ON THE PLAN.
- IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL AND ALL PLANTING AREAS THOROUGHLY SOAKED PRIOR TO PLANTING.
- LANDSCAPE CONTRACTOR SHALL REMOVE EXISTING VEGETATION, TRASH, CLIPPINGS, ROCK AND OTHER DEBRIS IN PLANTING AREAS.
- RAKE AND FINE GRADE ALL PLANTING AREAS PRIOR TO COMMENCEMENT OF PLANTING OPERATIONS.
- PLANTING PITS SHALL BE TWICE THE CONTAINER WIDTH AND OF EQUAL DEPTH.
- PLANTING PITS AND PLANTERS SHALL BE BACKFILLED WITH EXISTING SITE SOIL AND 1/4 (BY VOLUME) NITRIFIED TOP SOIL MIX. FERNS, AZALEAS AND ACID PLANTS SHALL RECEIVE AN ADDITIONAL 1/3 (BY VOLUME) PEAT IN BACKFILL MIX.
- TREES AND SHRUBS SHALL BE FERTILIZED AT THE TIME OF PLANTING WITH 21-6-GRAM AGRIFORM TABLETS AT THE FOLLOWING RATES: GROUND COVER-5 GRAM 20-10-5 TABLET/ 1 GAL. SIZE- 1 TABLET/ 15 GAL.-5 TABLETS, 36" BOX-10 TABLETS, 5 GAL. SIZE-3 TABLETS, 24" BOX-8 TABLETS, 48" BOX-12 TABLETS
- STAKE 5 GALLON AND DOUBLE STAKE 15 GALLON AND 24" BOX TREES, GUYING OF LARGER TREES SHALL BE DONE AT THE LANDSCAPE ARCHITECTS DISCRETION. CONTRACTOR SHALL BE RESPONSIBLE FOR TREE STABILITY DURING LENGTH OF THE GUARANTEE PERIOD.
- VERIFY TREE PIT DRAINAGE WITH 24 HOUR WATER FILL TEST PRIOR TO PLANTING. ALL BOXED TREES NOT DRAINING ARE TO HAVE A 4" DIAMETER AUGER HOLE DRILLED THROUGH ANY HARDPAN OR COMPACTED EARTH AS REQUIRED TO PROVIDE DRAINAGE IN A 24 HOUR PERIOD.
- FOR LANDSCAPE INSTALLATIONS, COMPOST AT A RATE OF A MINIMUM OF FOUR CUBIC YARDS PER 1000 S.F. OF PERMEABLE AREA SHALL BE INCORPORATED TO A DEPTH OF SIX INCHES INTO THE SOIL. SOILS WITH GREATER THAN 6% ORGANIC MATTER IN THE TOP 6 INCHES OF SOIL ARE EXEMPT FROM ADDING COMPOST AND TILLING.
- LANDSCAPE IMPROVEMENTS, INCLUDING, BUT NOT LIMITED TO PLANTS, BERMS, WALLS (DECORATIVE OR RETAINING), SIGNS, AND STRUCTURES HAVE BEEN SELECTED AND POSITIONED SO AS TO AVOID OBSTRUCTING VIEWS OF MOTORIST NEAR INTERSECTIONS AISLES, DRIVES, AND PEDESTRIAN WALKWAYS. TREES HAVE BEEN SELECTED (AND SHALL BE MAINTAINED) SUCH THAT, AT MATURE SIZE, SCAFFOLD BRANCHES WILL BE A MINIMUM OF 60 INCHES ABOVE THE FINISHED GRADE.
- AFTER ROUGH GRADING, CONTRACTOR SHALL TAKE SOIL SAMPLES FROM ENOUGH LOCATIONS ON THE SITE TO REPRESENT AN ADEQUATE CROSS SECTION OF CONDITIONS. SOIL TEST SHALL BE PERFORMED BY A SOIL TESTING LABORATORY. THE TEST SHALL INDICATE BUT NOT BE LIMITED TO THE FOLLOWING:
  - ORGANIC MATTER CONTENT
  - N, P, K
  - pH
  - EC
  - SOIL TEXTURE (SILT, CLAY, SAND)
- RECOMMENDATIONS FOR AMENDMENTS, LEACHING, AND MAINTENANCE FERTILIZATIONS, THE RESULTS AND RECOMMENDATIONS OF THE SOIL TESTING LABORATORY SHALL BE SUBMITTED TO AND APPROVED BY THE CITY. THE APPROVED RECOMMENDATIONS FOR AMENDMENTS AND BACKFILL SHALL BE INCORPORATED INTO THE LANDSCAPE PLANS PRIOR TO THE START OF CONSTRUCTION AND SHALL BECOME PART OF THE APPROVED PLANS.
- POST PLANTING FERTILIZATION SHALL BE PERFORMED BY CONTRACTOR AT 30, 60, AND 90 DAYS AFTER PLANTING.
- PLANTS SHALL NOT BE PLACED WITHIN 12" OF SPRINKLER HEADS.
- SHRUBS AND TREES SHALL BE UNDERPLANTED WITH GROUND COVER AS SHOWN BY ADJACENT SYMBOL.
- GROUND COVER SHALL BE PLANTED USING TRIANGULAR SPACING AS NOTED IN LEGEND.
- LANDSCAPE CONTRACTOR SHALL MAINTAIN ALL PLANTINGS FOR A PERIOD OF NINETY (90) DAYS AFTER COMPLETION. ALL AREAS SHALL BE KEPT CLEAN, WATERED, AND NEED-FREE. ALL DEAD OR DYING PLANTS SHALL BE REPLACED DURING THE MAINTENANCE PERIOD.
- CONTRACTOR SHALL GUARANTEE PLANT LONGEVITY AS FOLLOWS: TREES-ONE YEAR, SHRUBS & GROUND COVER-SIX MONTHS.
- DETERMINE THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE INITIATION OF ANY WORK. ALL WORK SHALL BE PERFORMANCE IN A MANNER WHICH WILL AVOID POSSIBLE DAMAGE TO UTILITIES. HAND EXCAVATE AS REQUIRED.
- TREES SHALL BE LOCATED A MINIMUM OF FIVE FEET FROM ANY DRAINAGE FLOW LINE, SEWER LINE, WATER LINE, GAS LINE, DRIVE WAYS OR ELECTRICAL CONDUIT.



**ADL PLANNING ASSOCIATES**

LANDSCAPE ARCHITECTURE

2979 STATE STREET SUITE "C"  
C A R L S B A D , C A . 9 2 0 0 6

DATE: \_\_\_\_\_ JOB NO: \_\_\_\_\_  
SCALE: \_\_\_\_\_ DRAWN BY: \_\_\_\_\_

REGISTERED LANDSCAPE ARCHITECT  
CALIFORNIA  
NO. 30726  
EXPIRES 12/31/2026



DATE	INITIAL	REVISION DESCRIPTION	DATE	INITIAL	DATE	INITIAL	CITY APPROVAL

**CITY OF CARLSBAD**  
PLANNING DIVISION

**ROADWAY IMPROVEMENTS**  
EL CAMINO REAL  
FROM SUNNY CREEK Rd TO JACKSPAR DR

APPROVED: *Hossein Ajdesh* HOSSEIN AJDEH 2/16/2024  
ENGINEERING MANAGER RCE 75991 EXPIRES 6/30/24 DATE

DWN BY: \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. DWG 529-1-1  
CHKD BY: \_\_\_\_\_  
R/WD BY: \_\_\_\_\_

INSPECTOR: \_\_\_\_\_ DATE: \_\_\_\_\_  
REVIEWED BY: \_\_\_\_\_ P.E. \_\_\_\_\_ EXP. \_\_\_\_\_ DATE

"AS BUILT"

SHEET 42 SHEETS 43

- ROOT BARRIERS SHALL BE INSTALLED ADJACENT TO ALL PAVING SURFACES, WHERE A PAVING SURFACE IS LOCATED WITHIN 5' OF A TREE'S TRUNK. ROOT BARRIERS SHALL EXTEND FIVE FEET IN EACH DIRECTION, FROM THE CENTER LINE OF THE TRUNK, FOR A TOTAL DISTANCE OF 10 FEET.
- ALL GRADING ON SITE SHALL HAVE POSITIVE SURFACE DRAINAGE (2% MINIMUM GRADE IN PLANTING AREAS) AWAY FROM STRUCTURES AND TERMINATING IN AN APPROVED DRAINAGE SYSTEM.
- ANY TREES LOCATED WITHIN A VEHICULAR SIGHT LINE MUST HAVE ALL LIMBS REMOVED TO A HEIGHT OF 6 FEET ABOVE THE ADJACENT TOP OF CURB.
- ALL PLANTING WITHIN VEHICULAR SIGHT TRIANGLES SHALL NOT EXCEED A MAXIMUM HEIGHT OF 30'.
- IT IS RECOMMENDED THAT A FULL NEED ABATEMENT PROGRAM BE PROVIDED TO REDUCE THE AMOUNT OF NEEDS PRIOR TO PLANTING. SEE THE FOLLOWING EXAMPLE:

- UPON COMPLETION OF ALL FINE GRADING WORK AND SOIL PREPARATION, PERFORM NEED CONTROL MEASURES AS FOLLOWS:
  - IRRIGATE ALL AREAS DESIGNATED TO BE PLANTED FOR A MINIMUM OF 10 MINUTES PER SETTING, TWO SETTINGS PER DAY FOR SEVEN DAYS TO GERMINATE ALL NEED SEED POSSIBLE.
  - APPLY A CONTACT NEED KILLER AND ALLOW FOR SUFFICIENT TIME TO OBTAIN COMPLETE KILL OF ALL NEEDS GERMINATED.
  - REPEAT STEP A ABOVE.
  - REPEAT STEP B ABOVE.

- TREES PLANTED WITHIN 5' OF PUBLIC SIDEWALKS SHALL BE INSTALLED WITH ROOT BARRIERS APPROVED BY THE CITY.
- PRIOR TO PLANTING OF ANY MATERIALS, COMPACTED SOILS SHALL BE TRANSFORMED TO A FRIABLE CONDITION. ON ENGINEERED SLOPES, ONLY AVENDED PLANTING HOLES NEED MEET THE REQUIREMENT OF THIS SECTION.
- THE APPLICATION OF ORGANIC MULCH MATERIALS MADE FROM RECYCLED OR POST-CONSUMER MATERIALS SHALL TAKE PRECEDENCE OVER INORGANIC MATERIALS UNLESS RECYCLES OR POST CONSUMER ORGANIC PRODUCTS ARE NOT LOCALLY AVAILABLE.

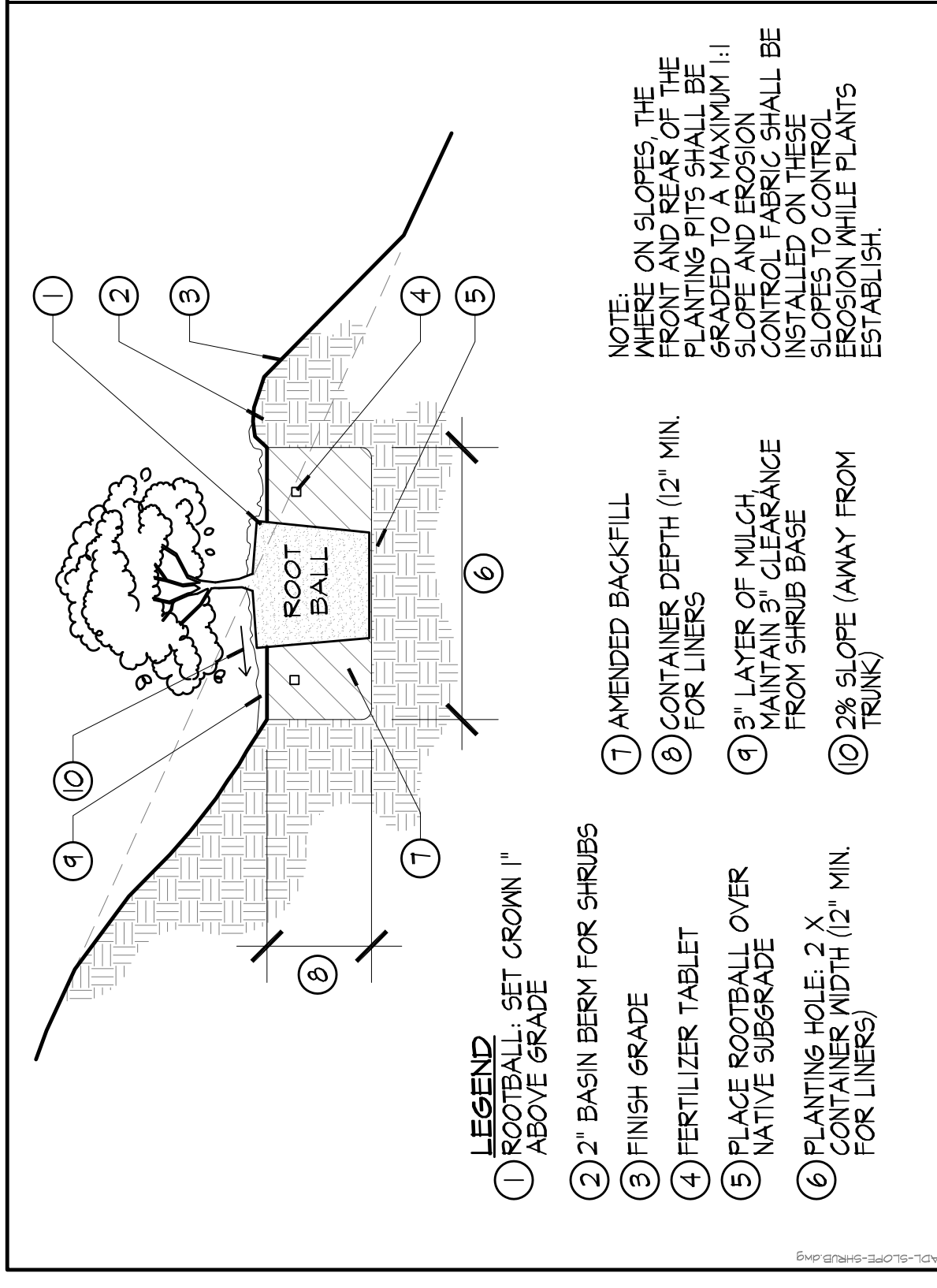
- SLOPES 6:1 OR STEEPER REQUIRING EROSION CONTROL MEASURES AS SPECIFIED HEREIN SHALL BE TREATED WITH ONE OR MORE OF THE FOLLOWING PLANTING STANDARDS:
  - STANDARD 1 - COVER CROP/AND EROSION CONTROL MATTING. COVER CROP SHALL BE A SEED MIX TYPICALLY MADE UP OF QUICK GERMINATING AND FAST COVERING GRASSES, CLOVERS, AND/OR WILD FLOWERS. SUBMIT THE SPECIFIC SEED MIX FOR CITY APPROVAL PRIOR TO APPLICATION. THE COVER CROP SHALL BE APPLIED AT A RATE SUFFICIENT TO PROVIDE 40% COVERAGE WITHIN THIRTY (30) DAYS. THE TYPE OF EROSION CONTROL MATTING SHALL BE AS APPROVED BY THE CITY AND AFFIXED TO THE SLOPE AS RECOMMENDED BY THE MANUFACTURER. ON SLOPES 3 FEET OR LESS IN VERTICAL HEIGHT WHERE ADJACENT TO PUBLIC WALKS OR STREETS, WHEN PLANTING OCCURS BETWEEN AUGUST 15 AND APRIL 15, EROSION CONTROL MATTING SHALL BE REQUIRED.
  - SLOPES GREATER THAN 3 FEET IN HEIGHT, EROSION CONTROL MATTING SHALL BE REQUIRED AND A COVER CROP SHALL NOT BE USED, UNLESS OTHERWISE APPROVED BY THE CITY.
  - STANDARD #2 - GROUND COVER ONE HUNDRED (100%) PERCENT OF THE AREA SHALL BE PLANTED WITH A GROUND COVER KNOWN TO HAVE EXCELLENT SOIL BINDING CHARACTERISTICS (PLANTED FROM A MINIMUM SIZE OF FLATTED MATERIAL AND SPACED TO PROVIDE FULL COVERAGE WITHIN ONE YEAR).
  - STANDARD #3 - LOW SHRUBS LOW SPREADING WOODY SHRUBS (PLANTED FROM A MINIMUM OF 1-GALLON CONTAINERS) SHALL COVER A MINIMUM OF SEVENTY (70%) PERCENT OF THE SLOPE FACE (AT MATURE SIZE).
  - STANDARD #4 - TREES AND/OR LARGE SHRUBS TREES AND/OR LARGE SHRUBS SHALL BE (PLANTED FROM A MINIMUM OF 1-GALLON CONTAINERS) SHALL BE INSTALLED AT A MINIMUM RATE OF ONE (1) PLANT PER TWO HUNDRED (200) SQUARE FEET.
- SLOPES - 6:1 OR STEEPER AND:
  - 3' OR LESS IN VERTICAL HEIGHT AND ADJACENT TO PUBLIC WALKS OR STREETS REQUIRE AT A MINIMUM STANDARD #1 (COVER CROP OR EROSION CONTROL MATTING).
  - 3' TO 8' IN VERTICAL HEIGHT REQUIRE STANDARDS #1 (EROSION CONTROL MATTING SHALL BE INSTALLED IN LIEU OF A COVER CROP), #2 AND #3.
  - IN EXCESS OF 8' IN VERTICAL HEIGHT REQUIRE STANDARDS #1 (EROSION CONTROL MATTING SHALL BE INSTALLED IN LIEU OF A COVER CROP), #2, #3, AND #4.

- AREAS GRADED FLATTER THAN 6:1 REQUIRE A COVER CROP PER STANDARD #1 WITH TEMPORARY IRRIGATION WHEN THEY HAVE ONE OR MORE OF THE FOLLOWING CONDITIONS:
  - SHEET GRADED PADS NOT SCHEDULED FOR IMPROVEMENTS WITHIN 6 MONTHS OF COMPLETION OF ROUGH GRADING.
  - A POTENTIAL EROSION PROBLEM AS DETERMINED BY THE CITY.
  - IDENTIFIED BY THE CITY AS HIGHLY VISIBLE AREAS TO THE PUBLIC OR HAVE SPECIAL CONDITIONS THAT WARRANT IMMEDIATE TREATMENT.
- SHRUB SPACING SHALL BE SUCH THAT 100% COVERAGE WILL OCCUR WITHIN ONE YEAR.
- LANDSCAPEING IS TO BE MAINTAINED BY THE CITY.

S:\PRODUCTS\2211E - ECR - landscape\483 024\22024 ECR landscape - Planting Support.dwg Tuesday, Apr 18 2023 3:25pm color

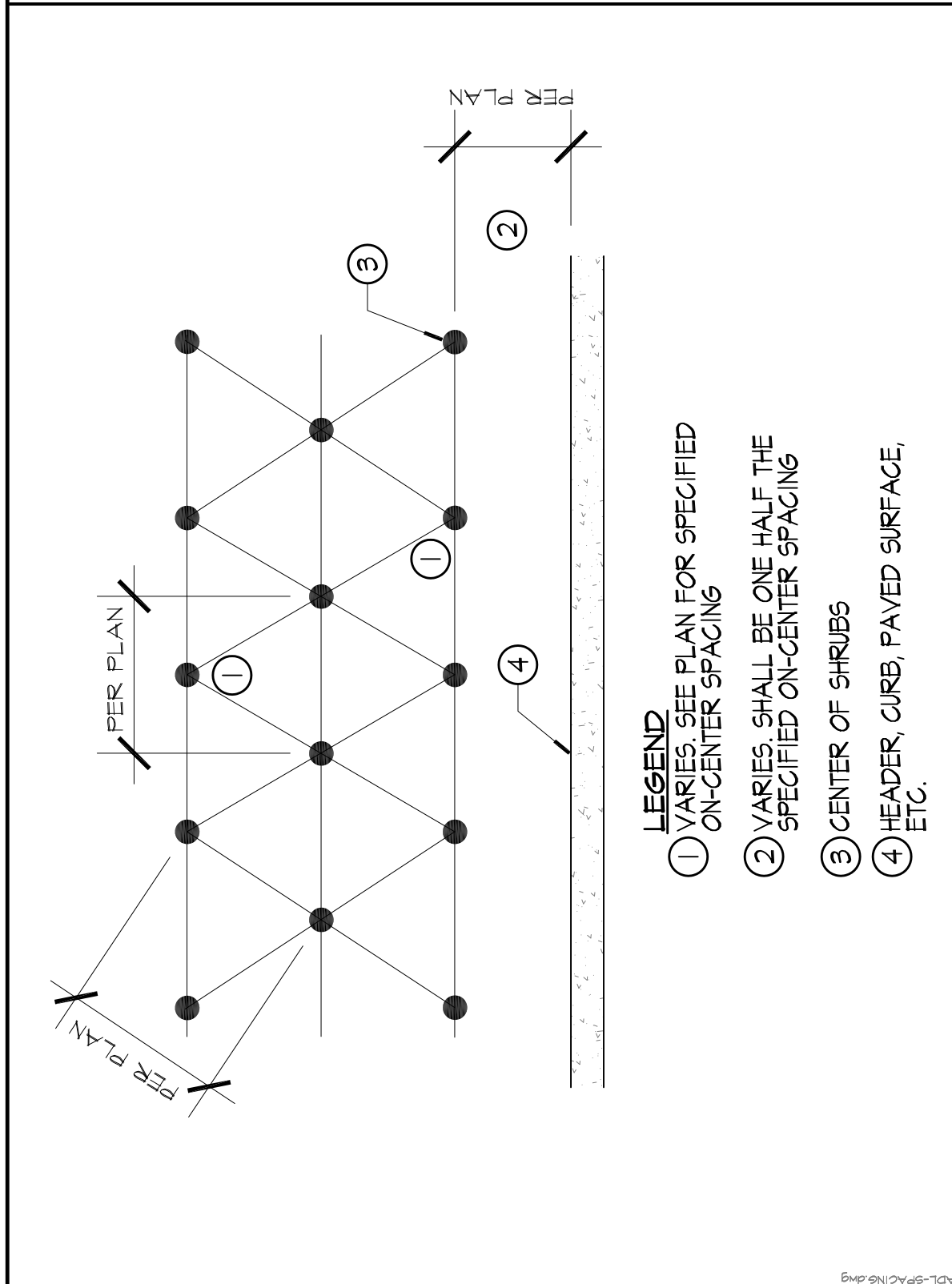
SEE SHEETS L-10 - L-12 FOR PLANTING PLANS  
SEE SHEET L-13 FOR PLANTING LEGENDS & NOTES  
SEE SHEET L-14 FOR PLANTING DETAILS





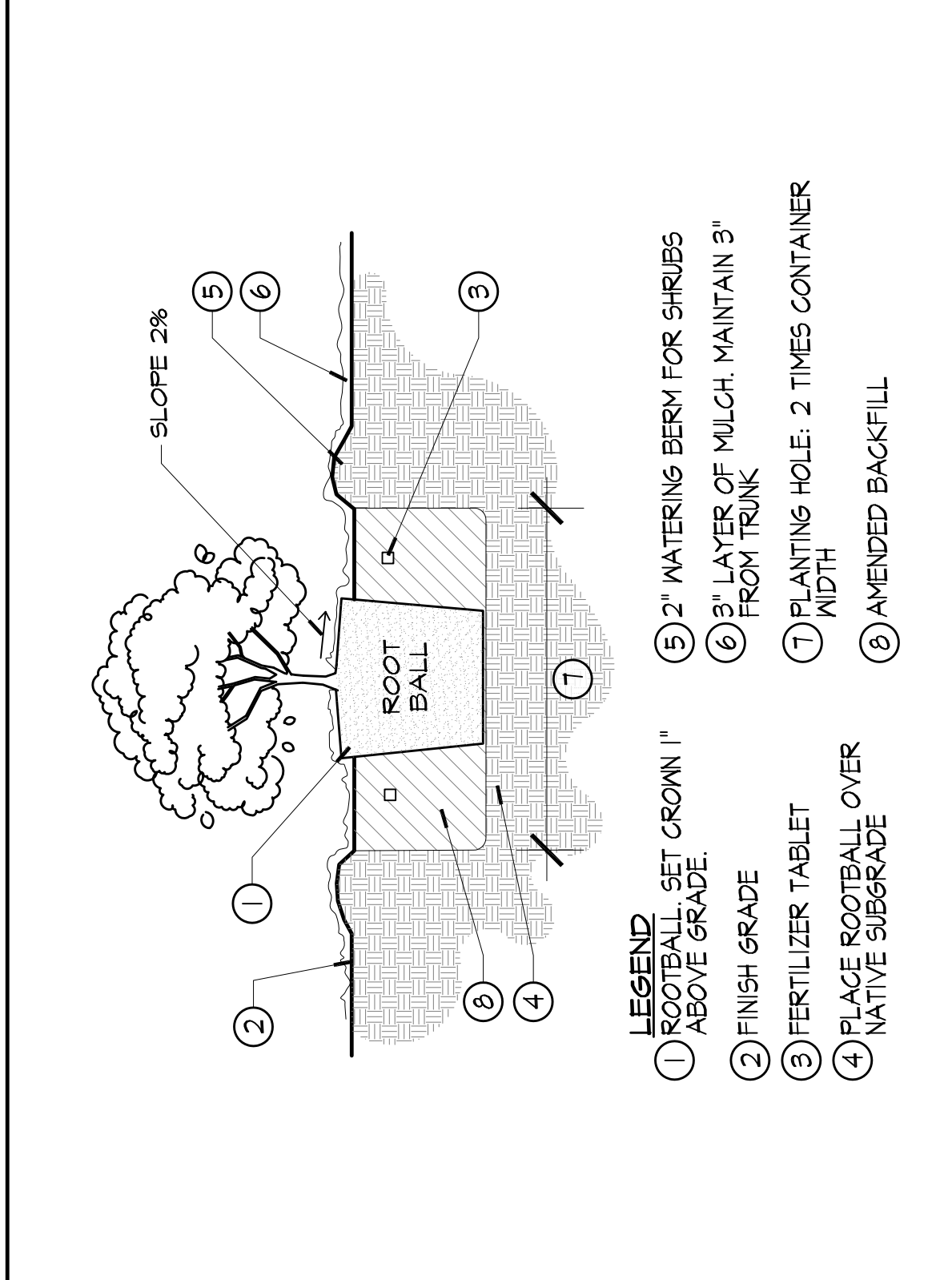
(A) SLOPE PLANTING: SHRUBS

SCALE: N.T.S.



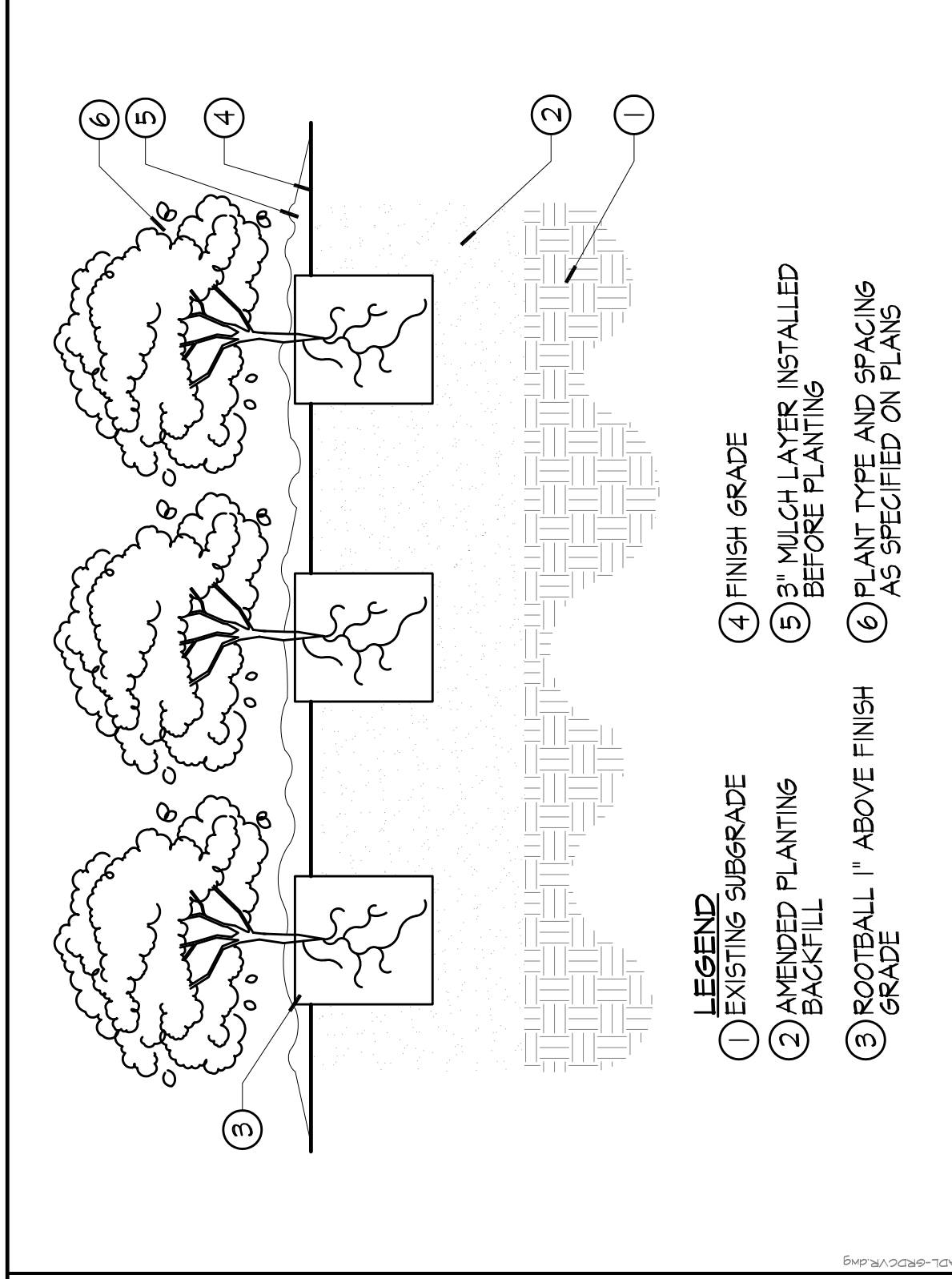
(B) PLANT SPACING

SCALE: SEE PLAN, N.T.S.



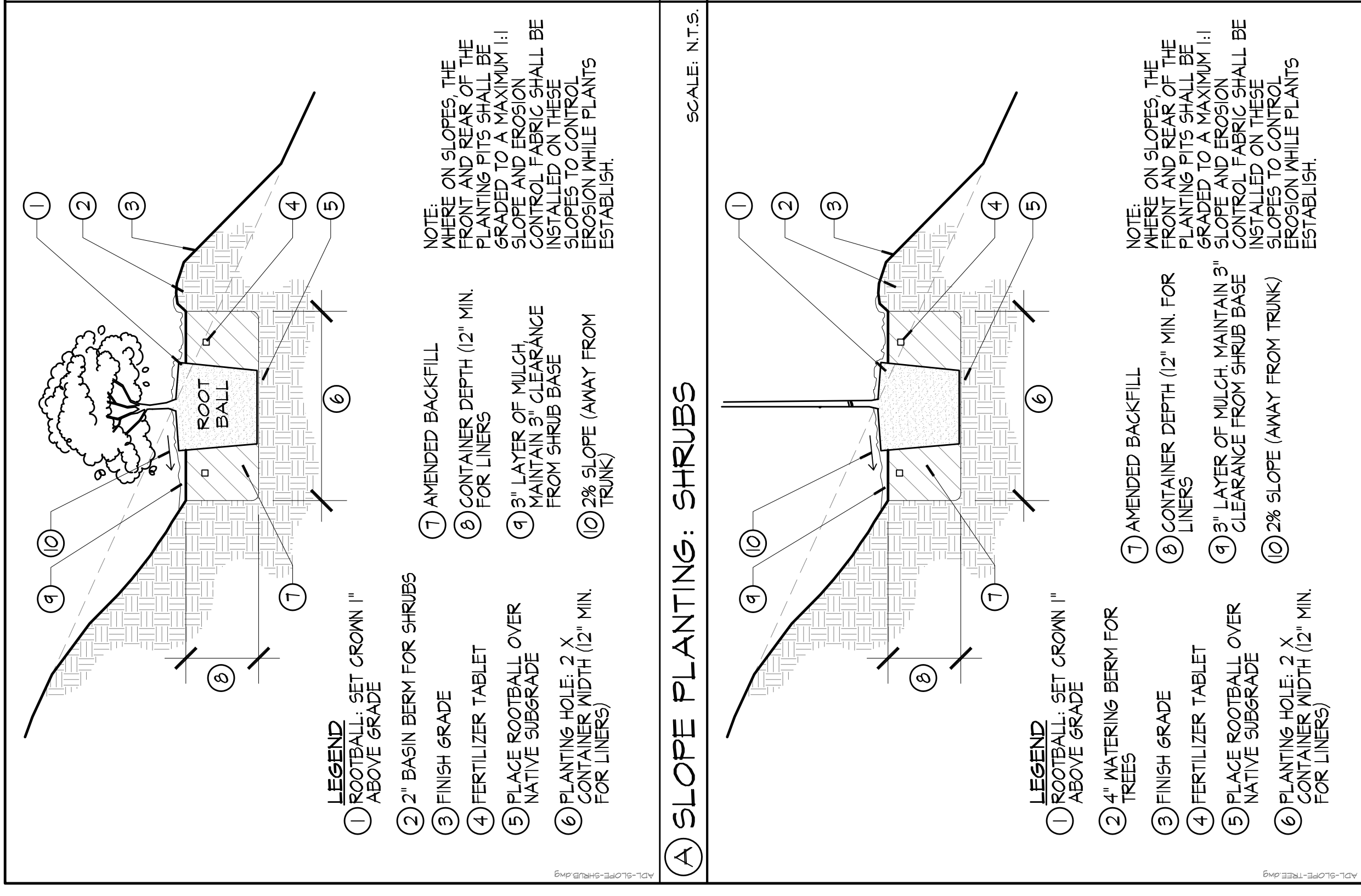
(C) SHRUB PLANTING

SCALE: N.T.S.



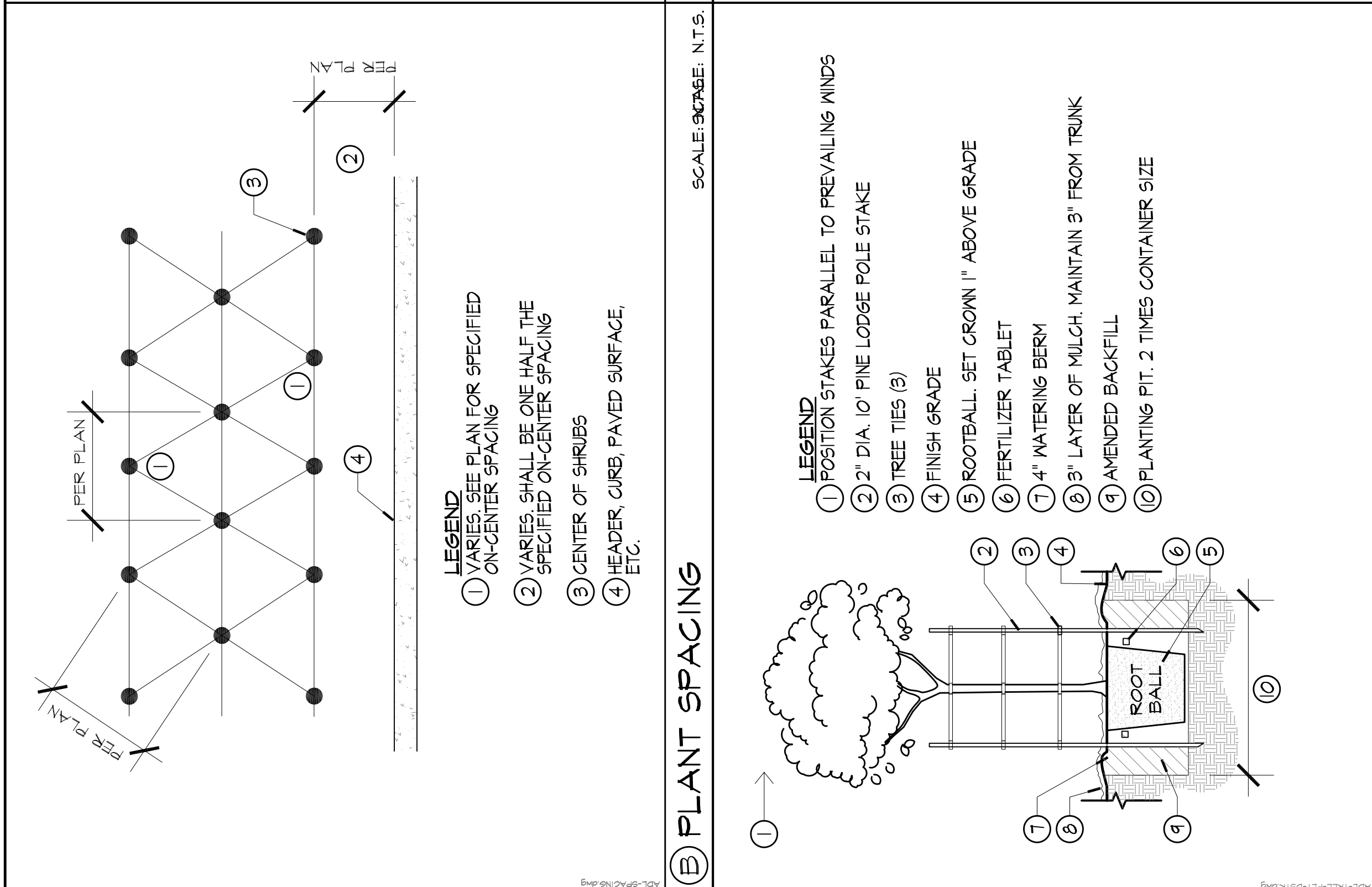
(D) GROUND COVER PLANTING

SCALE: N.T.S.



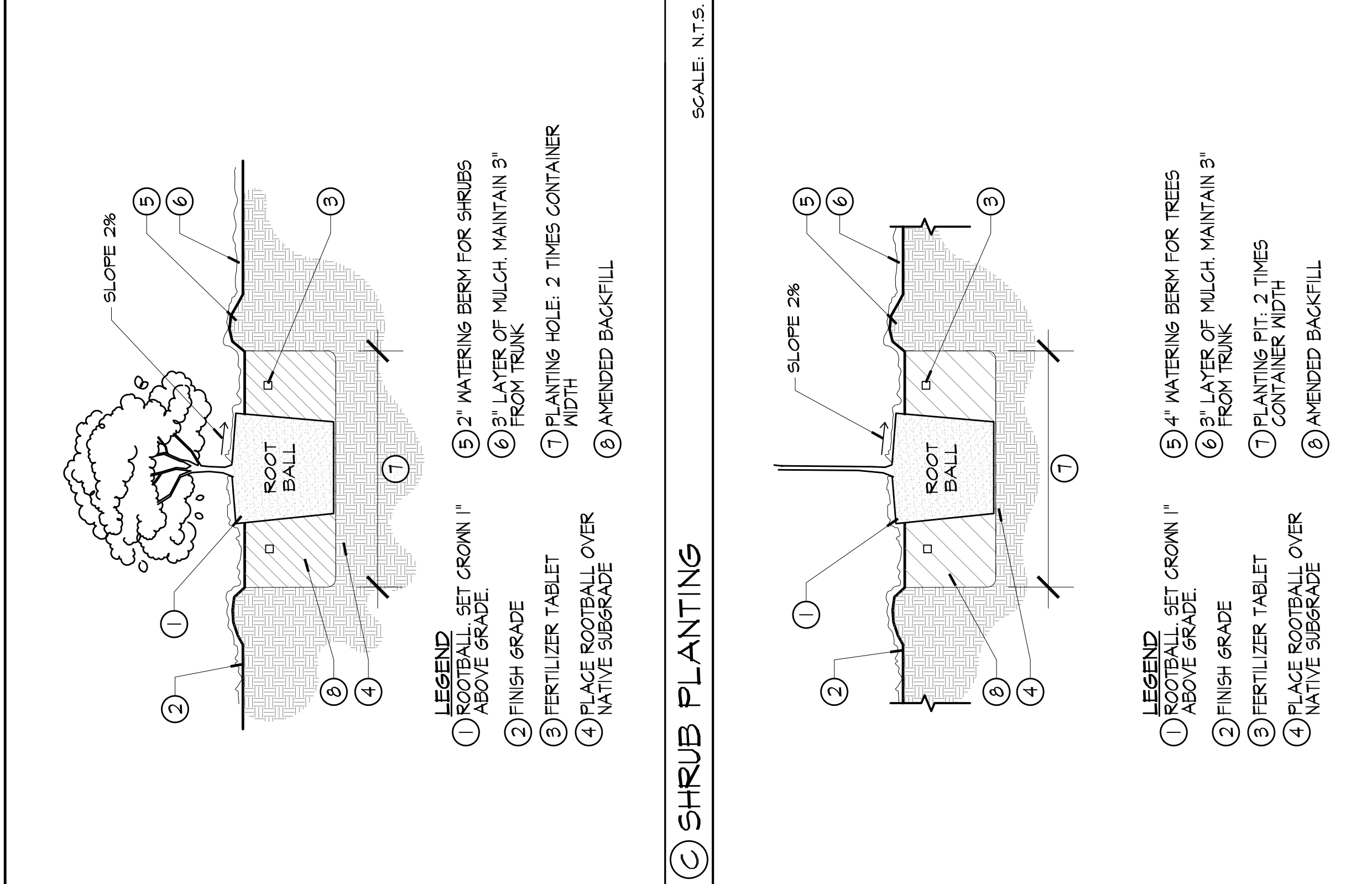
(E) SLOPE PLANTING: TREES

SCALE: N.T.S.



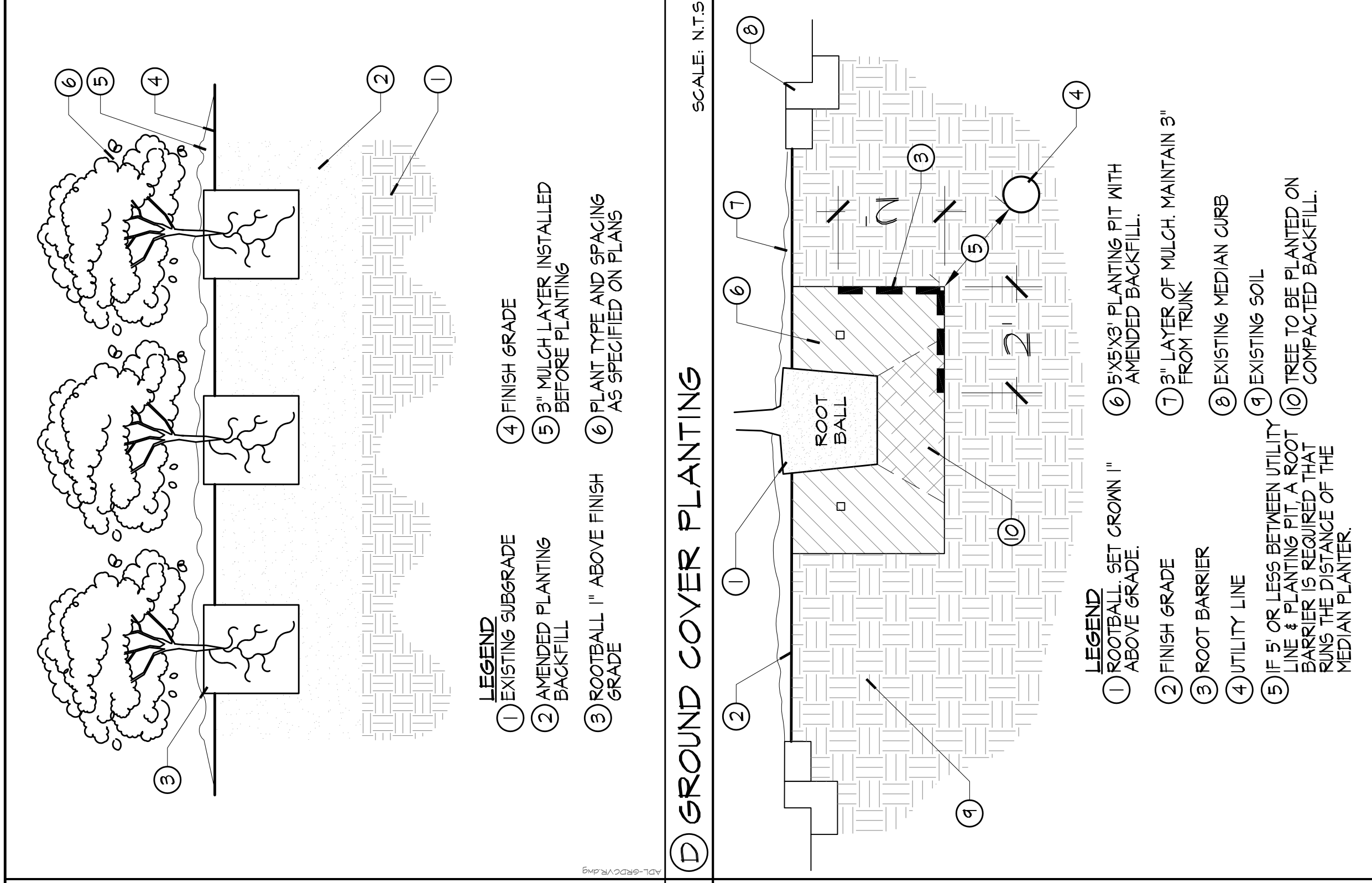
(F) TREE PLANTING: DOUBLE STAKE

SCALE: N.T.S.



(G) TREE PLANTING

SCALE: N.T.S.



(H) TREE PLANTING W/ ROOT BARRIER

SCALE: N.T.S.

Exhibit 8

"AS BUILT"

P.E. \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ INSPECTOR \_\_\_\_\_ DATE \_\_\_\_\_

SHEET **43** OF **43** SHEETS

CITY OF CARLSBAD PLANNING DIVISION

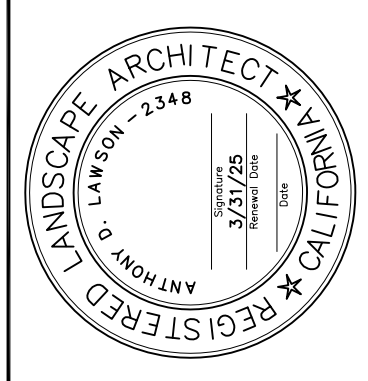
LANDSCAPE IMPROVEMENT PLANS FOR:  
**EL CAMINO REAL ROADWAY IMPROVEMENTS**  
FROM SUNNY CREEK Rd TO JACKSPAR Dr

APPROVED: Hossein Ajdeh HOSSEIN AJDEH 2/16/2024  
ENGINEERING MANAGER RCE 75991 EXPIRES 6/30/24 DATE

DWN BY: \_\_\_\_\_ PROJECT NO. 6094 DRAWING NO. DWG 529-1

CHKD BY: \_\_\_\_\_ REV'D BY: \_\_\_\_\_

SEE SHEETS L-10 - L-12 FOR PLANTING PLANS  
SEE SHEET L-13 FOR PLANTING LEGENDS & NOTES  
SEE SHEET L-14 FOR PLANTING DETAILS



**DIGALERT**  
UNDERGROUND SERVICE ALERT  
LANDSCAPE ARCHITECTURE  
CALIFORNIA  
REGISTERED LANDSCAPE ARCHITECT  
NO. 2148  
3/0/2025  
EXPIRES 6/30/24

ADL PLANNING ASSOCIATES  
LANDSCAPE ARCHITECTURE  
2979 STATE STREET SUITE "C"  
CARLSBAD, C.A. 92006  
TEL: (619) 733-8317 FAX: (619) 733-8314





**CITY OF CARLSBAD**  
**CONTRACT DOCUMENTS**

**FOR:**

**El Camino Real Widening from Sunny Creek Road to Jackspar Drive**

Project No. 6094  
PWS24-2373TRAN

**1635 Faraday Ave, Carlsbad, CA 92008**  
**Email: [PWContractAdmin@carlsbadca.gov](mailto:PWContractAdmin@carlsbadca.gov)**



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## ATTACHMENTS



- A – Permission for Right of Entry to Rancho Carlsbad HOA
- B – Grant Deed and Temporary Construction Easements
- C – Geotechnical Investigation Report by Allied Geotechnical Engineers, Inc.
- D – Storm Water Quality Technical Memo
- E – CARB Fleet Compliance Certification



# SECTION 1

## 00 11 10 NOTICE INVITING BIDS

### 1. RECEIPT OF BIDS.

The City of Carlsbad / Carlsbad Municipal Water District (“Agency”) will accept Bids via electronic format via the City of Carlsbad Electronic Bidding Site up to and no later than **<insert Date and Time>** through the online bidding portal ([Contracting & Purchasing | Carlsbad, CA \(carlsbadca.gov\)](https://www.carlsbadca.gov/contracting-purchasing)) for the construction of the Work entitled:

#### **EL CAMINO REAL WIDENING FROM SUNNY CREEK ROAD TO JACKSPAR DRIVE**

PWS24-2373TRAN

Project No. 6094

### 2. DESCRIPTION OF WORK.

The Work includes the provision of all equipment, labor, materials, tools, services, transportation, permits, utilities, and all other items necessary to complete the construction of the following, as specified and shown in the Construction Documents: widen northbound El Camino Real for approximately 1,600 linear feet with adjacent curb, gutter and sidewalk between Sunny Creek Road and Jackspar Drive.

The Work Site is located in the City of Carlsbad, in the County of San Diego, California.

### 3. COMPLETION OF WORK.

The Contract Time is established as one hundred thirty (130) Days. The Contract Time shall begin on the date of receipt of the Notice to Proceed.

The Engineers’ estimate for this Project is \$3,309,000.00.

### 4. OPENING AND AWARD OF BIDS.

Agency shall consider awarding the Contract for the Project to the lowest, responsive, responsible Bidder as determined by the Agency from the base Bid alone. The Agency has the right to reject any or all Bids or to waive any irregularities or informalities in any Bids or in the Bidding process.

### 5. PERIOD FOR AWARD.

A period of ninety (90) Calendar Days from the time of Bid opening may be required to award the Contract. No Bidder may withdraw its Bid or Bid Guarantee during this period. Bidders shall assume full responsibility for their Bid Price during this period and shall make certain that such delay does not restrict the Bid Guarantee.



## 6. BIDDER QUALIFICATIONS.

Bidders shall be licensed contractors pursuant to Business and Professions Code Sections 7000 *et seq.* under the classification of **A – General Engineering**, as of the date of submittal of the Bid Documents and shall maintain such license until final acceptance of the Work. Additional qualifications are included in the Contract Documents. Bidders are advised of the minimal qualifications, certifications, and years of experience requirements for specific items of work specified in the technical specifications.

## 7. PRE-BID CONFERENCE.

The Agency will not conduct a pre-Bid Conference.

## 8. OBTAINING CONTRACT DOCUMENTS.

Bidders may obtain a copy of the Contract Documents from Agency's website ([Contracting & Purchasing | Carlsbad, CA \(carlsbadca.gov\)](https://www.carlsbadca.gov/contracting-purchasing)). To the extent required by Public Contract Code Section 20103.7, upon request from a contractor plan room service, the Agency shall provide an electronic copy of the Contract Documents at no charge to the contractor plan room. It is the responsibility of each prospective Bidder to download and print all Bid Documents for review and to verify the completeness of Bid Documents before submitting a Bid. All Addenda will be posted on the online bidding portal. It is the responsibility of each prospective Bidder to check the online bidding portal on a daily basis through the close of the bidding period for any applicable Addenda. The Agency does not assume any liability or responsibility for any defective or incomplete copying, excerpting, scanning, faxing, downloading or printing of the Bid Documents. Information on the online bidding portal may change without notice to prospective Bidders. The Contract Documents shall supersede any information posted or transmitted by the online bidding portal. No time extensions or other consideration will be given for non-receipt or other circumstance associated with the review or acquisition of Contract Documents. Bids must be submitted on the Agency's Bid Forms in the Contract Documents.

## 9. BID GUARANTEE AND BONDS.

Each Bid shall be accompanied by cash, a certified or cashier's check or Bid Bond secured from a surety company satisfactory to the Agency, the amount of which shall not be less than 10% of the submitted Total Bid Price, made payable to the Agency as bid security. The bid security shall be provided as a guarantee that within 10 Working Days after the Agency provides the successful bidder the Notice of Award, the successful Bidder will enter into a contract and provide the necessary bonds and certificates of insurance. The bid security will be declared forfeited if the successful Bidder fails to comply within these 10 Working Days. No interest will be paid on funds deposited with the Agency.

All Bidders must upload Bidder's Bond to the online bidding portal. The original Bid Bond for the 3 apparent low Bidders must be submitted to the city within 2 Business Days of Bid opening.

The successful Bidder will be required to furnish a Faithful Performance Bond and a Labor and Material Bond each in an amount equal to 100% of the Contract Price. Each bond shall be in the



forms set forth in the Contract Documents, shall be secured from a surety company that meets all State of California bonding requirements, as defined in Code of Civil Procedure Section 995.120, and that is a California admitted surety insurer. Pursuant to Public Contract Code Section 22300, the successful Bidder may substitute certain securities for funds withheld by Agency to ensure its performance under the Contract.

#### 10. PREVAILING WAGE RATES AND LABOR COMPLIANCE.

This Project is subject to prevailing wages and labor compliance per the Labor Code. To this end, Bidder shall sign and submit with its Bid the California Department of Industrial Relations (DIR) Public Works Contractor Registration Certification on the form 00 45 00 provided. Failure to submit this form may render the bid non-responsive. In addition, each Bidder shall provide the registration number for each listed Subcontractor in the space provided in the Proposed Subcontractors form. In bidding this Project, it shall be the Bidder's sole responsibility to evaluate and include the cost of complying with all labor compliance requirements under this Contract and applicable law in its Bid. A copy of the prevailing wage rates may be obtained via the internet at: [www.dir.ca.gov/dlsr/](http://www.dir.ca.gov/dlsr/).

#### 11. CALIFORNIA AIR RESOURCES BOARD ADVANCED CLEAN FLEETS REGULATIONS.

Contractor's vehicles with a gross vehicle weight rating greater than 8,500 lbs. and light-duty package delivery vehicles operated in California may be subject to the California Air Resources Board (CARB) Advanced Clean Fleets regulations. Such vehicles may therefore be subject to requirements to reduce emissions of air pollutants. For more information, please see Attachment E and visit the CARB Advanced Clean Fleets webpage at <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets>.

#### 12. PROJECT ADMINISTRATION/QUESTIONS.

Requests for Information (RFI) or interpretations of Bid Documents during the bid period shall be submitted via Online Q&A in the online bidding portal.

The cutoff date and time to submit questions or substitution request regarding this Project via Online Q&A in the online bidding portal is **ENTER DATE, at TIME**. No questions will be entertained after that date.

The answers to questions submitted during the bidding period will be published in an addendum and provide to those bidding on the Project no later than **DATE**.

For further information, see the online bidding portal.

## END OF SECTION



## 00 21 10 INSTRUCTIONS TO BIDDERS

### 1. SECURING CONTRACT DOCUMENTS.

Bids must be submitted to the Agency on the Bid Forms which are a part of the Contract Documents for the Project. The Contract Documents may be obtained from the Agency's online bidding portal ([Contracting & Purchasing | Carlsbad, CA \(carlsbadca.gov\)](https://carlsbadca.gov/contracting-purchasing)). Prospective bidders are encouraged to communicate with the Agency well in advance of the date and time bids are due to the Agency ("Bid Submission Deadline") to determine the availability of Contract Documents.

The Agency may also make the Contract Documents available for review at one or more plan rooms. Prospective Bidders who choose to review the Contract Documents at a plan room must contact the Agency to obtain the required Contract Documents if they decide to submit a Bid for the Project.

Addenda will be posted on the online bidding portal. Failure to acknowledge all Addenda may make a Bid nonresponsive and ineligible for award of the Contract. Bidders are advised to verify the issuance of all Addenda and receipt of them 1 Working Day prior to bidding. Failure to acknowledge all Addenda may make a Bid nonresponsive and ineligible for award of the Contract.

### 2. EXAMINATION OF SITE AND CONTRACT DOCUMENTS.

At its own expense and before submitting its Bid, each Bidder shall visit the Site of the proposed Work and fully acquaint itself with the conditions relating to the construction and labor required so that the Bidder may fully understand the Work, including but not limited to, difficulties and restrictions attending the execution of the Work under the Contract. Each Bidder shall carefully examine the Drawings, and shall read the Specifications, Contract Documents, and all other referenced documents. Each Bidder shall also determine the local conditions which may in any way affect the performance of the Work, including local tax structure, contractors' licensing requirements, availability of required insurance, the prevailing wages and other relevant cost factors. Each Bidder shall also familiarize itself with all federal, state and local laws, ordinances, rules, regulations and codes affecting the performance of the Work, including the cost of permits and licenses required for the Work, and shall make such surveys and investigations, including investigations of subsurface or latent physical conditions at the Site or where Work is to be performed as may be required. Bidders are responsible for consulting the standards referenced in the Contract. The failure or omission of any Bidder to receive or examine any contract documents, forms, instruments, addenda, or other documents, or to visit the Site and acquaint itself with conditions there existing shall in no way relieve any Bidder from any obligation with respect to its Bid or to the Contract and no relief for error or omission will be given except as required under California law. The submission of a Bid shall be taken as conclusive evidence of compliance with this Section.



### 3. INTERPRETATION OF DRAWINGS AND DOCUMENTS.

Prospective Bidders unclear as to the true meaning of any part of the Drawings, Specifications or other parts of the Contract Documents, or discrepancies in or omissions from the Drawings and Specifications, may promptly submit a written request for information, interpretation, clarification, or correction (“RFI”) to the Bid Administrator, the Agencies designated representative for soliciting and conducting bids on the Agencies online e-bidding portal. (defined below). The Agency may not respond to RFIs submitted past the Q&A Submission Deadline. The Bidder submitting the RFI is responsible for prompt delivery to the Bid Administrator.

Responses to RFIs will be made only by duly issued written Addenda. The Agency shall not provide verbal responses to RFIs. Copies of written Addenda will be posted on the online bidding portal for each prospective Bidder who has downloaded a set of Contract Documents. The Agency will not be responsible for any other explanation or interpretations of the Drawings, Specifications or other parts of the Contract Documents. If any Prospective Bidder becomes aware of any errors or omissions in any part of the Contract Documents, the Prospective Bidder must promptly notify the Agency of such error or omission.

Before award of the Contract, no addition to, modification of, or interpretation of any provision in the Contract Documents will be given by any agent, employee or contractor of the Agency except as otherwise specified in these Instructions to Bidders. No bidder may rely on verbal directions given by any agent, employee or contractor of the Agency except as specified in these Instructions to Bidders.

### 4. QUESTIONS.

Questions regarding this Project must be submitted through the online e-bidding portal. Questions shall be definite and certain, and shall reference applicable drawing sheets, notes, details or specification sections. The deadline to submit questions is identified in the Notice Inviting Bids. Questions received after the deadline may not be answered. Responses to questions submitted during the bidding period will be published in an Addendum and provided to those bidding on the Project no later than the date specified in the Notice Inviting Bids.

Except for the Agency’s Bid Administrator, no other members of the Agency’s staff or Board should be contacted about this procurement during the bidding process. All inquiries and comments from Prospective Bidders regarding a proposed Bid must be communicated in writing, unless otherwise instructed by the Agency. The Agency may, in its sole discretion, disqualify any Prospective Bidder who engages in any prohibited communications.

### 5. PRE-BID CONFERENCE.

The Notice Inviting Bids shall state whether a Pre-Bid Conference will be held and, if so, whether attendance is mandatory. Bids will not be accepted from any bidder who did not attend a Mandatory Pre-Bid Conference. The Conference will commence at the specified start time and the Site visit will begin at the conclusion of the Conference. Prospective Bidders who arrive late



and who do not sign the “Sign-In” or attendance sheet, may be disqualified from the bidding process.

Representatives of the Agency and its consultants, if any, will be present to the extent possible. Questions asked by Bidders at the Pre-Bid Conference not specifically addressed within the Contract Documents shall be answered in writing and shall be sent to all Bidders present at the Pre-Bid Conference.

A Pre-Bid Conference may include a Project Site visit. Personal Protective Equipment (PPE) is required of all Job Walk attendees. Attendees are required to wear closed toe shoes, long pants, no sleeveless shirts, safety glasses (may be prescription with side shields if in process areas), safety vests and hard hats. Only those possessing such attire will be allowed on the Job Site. The Agency will not provide personal protective equipment to Job Walk attendees.

## 6. ADDENDA.

The Agency may revise the Contract Documents before the Bid Submission Deadline. Revisions, if any, shall be made by written Addenda. All Addenda will be posted on the online bidding portal. All Addenda issued by the Agency shall be acknowledged by the Bidder on the online bidding portal and made part of the Contract Documents. The Bidder shall acknowledge the Addenda before submitting its Bid. Bidders are responsible for the receipt of all Addenda. The Agency may reject a Bid if the Bidder fails to acknowledge all Addenda.

Pursuant to Public Contract Code Section 4104.5, if the Agency issues an Addendum which includes material changes to the Project less than 72 hours before the Bid Submission Deadline, the Agency will extend the Bid Submission Deadline by no less than 72 hours. The Agency may determine, in its sole discretion, whether an Addendum warrants postponement of the Bid Submission Deadline.

## 7. ALTERNATE BIDS.

If alternate Bid items are called for in the Notice Inviting Bids and the Contract Documents, the time required for completion of the Work for the alternate Bid items is factored into the Contract duration and no additional Contract time will be awarded. The Agency may elect to include one or more of the alternate Bid items, or to otherwise remove certain work from the Project scope of work. Accordingly, each Bidder must ensure that each Bid item contains a proportionate share of profit, overhead, and other costs or expenses which will be incurred by the Bidder.

If the Agency utilizes alternate Bid items as described above, the Notice Inviting Bids will prescribe predetermined criteria for the Bid package selection or a selection process in which price information and Bidder identities are not revealed to the Agency before the Bid Submission Deadline.



## 8. COMPLETION OF BID FORMS.

Bids shall only be prepared using the Bid Forms which are included in the Contract Documents. The use of substitute Bid Forms other than legible and correct photocopies of those provided by the Agency are prohibited. Bids shall be executed by an authorized signatory as described in these Instructions to Bidders. In addition, Bidders shall fill in all blank spaces (including inserting "N/A" where applicable), and initial all interlineations, alterations, or erasures to the Bid Forms. Bidders shall neither delete, modify, nor supplement the printed matter on the Bid Forms nor make substitutions thereon. Use of black or blue ink, indelible pencil, or a typewriter is required. Deviations from these instructions may result in the Bid being deemed non-responsive.

The following documents must be completed and properly executed including notarization, where indicated, and submitted as a part of the complete Bid Package:

1. Bid Form (00 41 00)
2. Bid Bond (00 43 10) or Bid Security (00 43 20) with check/cash
3. Proposed Subcontractors Form (00 43 30)
4. Bidder Information and Experience Form (00 43 40)
5. Non-Collusion Affidavit (00 45 10)
6. Iran Contracting Act Certification (00 45 15)
7. Public Works Contractor Registration Certification (00 45 20)
8. Certificate of Insurance (00 45 25)
9. Statement Regarding Debarment (00 45 30)
10. Disclosure of Discipline Record (00 45 35)
11. CARB Fleet Compliance Certification (Attachment E)
12. Acknowledgement of ALL Addenda on the online bidding portal.
13. Optional Escrow Agreement, as applicable (00 61 30)

All Bids shall be computed on the basis of the given estimated quantities of work, as indicated in the Bid, multiplied by the unit price as submitted by the Bidder.

When paper copies are submitted, all prices must be written in ink or typewritten. Changes or corrections may be crossed out and typed or written in with ink and must be initialed in ink by a person authorized to sign for the Contractor.

## 9. GOVERNING GENERAL PROVISIONS.

The Specifications contained in the Agency Supplemental General Provisions (00 73 00) take precedence over the specification language contained in the Standard Specifications for Public Works Construction, "the Greenbook" latest edition and all errata. The Supplemental General Provisions address the unique conditions in the City of Carlsbad that are not addressed in the Greenbook. Therefore, if there is a conflict between the two, the Supplemental Provisions shall control over the Greenbook.



The Greenbook may be purchased at Bidder's/Contractor's local technical bookstore, online or directly from the publisher. The Supplemental Provisions are available only for download from the online bidding portal with Contract Documents. The Agency does not provide hard copies.

## 10. MODIFICATIONS OF BIDS.

Each Bidder shall submit its Bid in strict conformity with the requirements of the Contract Documents. Unauthorized additions, modifications, revisions, conditions, limitations, exclusions, or provisions attached to a Bid may render it non-responsive and may cause its rejection. Bidders shall not delete, modify, or supplement the printed matter on the Bid Forms, or make substitutions thereon. Oral, telephonic, and electronic modifications will not be considered.

## 11. BID GUARANTEE.

Each Bid shall be accompanied by: (a) a cashier's check; or, (b) a certified check made payable to Agency; or, (c) a Bid Bond secured from a surety company satisfactory to the Board, the amount of which shall not be less than 10% of the total bid price, made payable to Agency as bid security. Personal sureties and unregistered surety companies are unacceptable. The surety insurer shall be a California admitted surety insurer, as defined in Code of Civil Procedure Section 995.120. The bid security shall be provided as a guarantee that within 10 Working Days after the Agency provides the successful Bidder the Notice of Award, the successful Bidder will enter into a contract and provide the necessary bonds and certificates of insurance. The bid security may be declared forfeited if the successful Bidder fails to enter into a contract and provide the necessary bonds and certificates of insurance. Any Bid received that does not comply with these Bid Guarantee instructions may be rejected as non-responsive, and Agency may enter into a contract with the next lowest, responsive, responsible Bidder, or may call for new Bids. No interest shall be paid on funds deposited with the Agency. Copies of Bid Bonds submitted to the Agency shall have the same force and effect as the original.

The Bidder's security of the second and third next lowest responsive Bidders may be withheld until the Contract has been fully executed. The security submitted by all other unsuccessful Bidders shall be returned to them, or deemed void, within 10 Working Days after the Contract is awarded.

The proceeds of the Bidder's security may also become property of the Agency if the Bidder withdraws its Bid within 15 Calendar Days after the Bid opening date, unless otherwise required by law, including Public Contract Code Section 5100 *et. seq.*, and notwithstanding the award of the Contract to another Bidder.

The Bidder shall submit Bid Bond (00 43 10) or Bid Security (00 43 20) with properly certified check with the Bid Package.



## 12. LABOR & MATERIAL BOND AND PERFORMANCE & WARRANTY BOND REQUIREMENTS.

The successful Bidder shall furnish Agency with a Labor and Material Payment Bond and a Performance and Warranty Bond, each in an amount equal to 100% of the Contract price. Each bond shall be secured from a surety company that meets all State of California bonding requirements, as defined in Code of Civil Procedure Section 995.120 and is admitted by the State of California, and whose assets exceed their liabilities in an amount equal to or in excess of the amount of the bond. The Agency shall not accept personal sureties and unregistered surety companies. Each bond shall be accompanied, upon the request of Agency, with all documents required by Code of Civil Procedure Section 995.660 to the extent required by law. All bonding and insurance requirements shall be completed and submitted to Agency within 10 Working Days from the date the Agency provides the successful Bidder with the Notice of Award.

These bonds shall be kept in full force and effect during the course of this Project and shall extend in full force and effect and be retained by the Agency until they are released as stated in the Contract. The Bonds are to be accompanied by an original, or a certified copy, of the unrevoked appointment, power of attorney, by laws, or other instrument entitling or authorizing the person who executed the bond to do so.

## 13. SUBSTITUTION OF SECURITY.

The Contract Documents call for monthly progress payments based upon the percentage of the Work completed. The Agency will retain a percentage of each progress payment as provided by the Contract Documents. At the request and expense of the successful Bidder, the Agency will substitute securities for the amount so retained in accordance with Public Contract Code Section 22300.

## 14. OPTIONAL ESCROW FOR SECURITY DEPOSIT.

Pursuant to applicable provisions of law (i.e., Public Contract Code Section 10263), appropriate securities may be substituted for any obligation required by these instructions or for any monies withheld by the Agency to ensure performance under the Contract. Public Contract Code Section 10263 requires monies or securities to be deposited with the Agency or a state or federally chartered bank in California as the escrow agent. The escrow agent shall maintain insurance to cover negligent acts and omissions of the agent in connection with the handling of retentions under this section in an amount not less than \$100,000 per contract.

## 15. INSURANCE REQUIREMENTS.

Before commencing the Work, the successful Bidder shall purchase and maintain insurance as set forth in the Agency General Conditions. If the Bid is accepted, and if requested by the Agency, Contractor shall provide Agency or preferred vendor copies of the insurer's most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Insurance Code Section 900 *et seq.* within 10 Calendar Days of the insurer's receipt of a request to submit the statements.



In accordance with the provisions of Labor Code Section 3700, Contractor shall secure the payment of compensation to its employees. Contractor shall sign and file with the Agency the following certificate before performing the Work under the Contract:

I am aware of the provisions of Labor Code Section 3700, which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of the Contract.

The form of such, Certificate of Insurance (00 45 25), shall be submitted as a part of the Bid Package.

Insurance must be placed with insurers that:

1. Have a rating in the most recent Best's Key Rating Guide of at least A-VII, or
2. Appear on the List of Approved Surplus Line Insurers, ("LASLI") with a Best's Key Rating Guide of at least A: X.
3. Are admitted to conduct the business of insurance in the State of California by the Insurance Commissioner.
4. Otherwise comply with all other aspects of City Council Policy No. 70.

Auto policies offered to meet the specification of this Contract must:

1. Meet the conditions stated above for all insurance companies.
2. Cover any vehicle used in the performance of the Contract, used onsite or offsite, whether owned, non-owned or hired, and whether scheduled or non-scheduled.

Workers' compensation insurance required under this Contract must be offered by a company meeting the above standards with the exception that the Best's rating condition may be waived. The Agency does accept policies issued by the State Compensation Fund meeting the requirement for workers' compensation insurance.

The Contractor shall be required to maintain insurance as specified in the Contract. Any additional cost of the insurance shall be included in the Bid price.

The award of the Contract by the Board is contingent upon the Contractor submitting the required bonds and insurance, as described in the Contract Documents, within 10 Working Days of bid opening. If the Contractor fails to comply with these requirements, the Agency may award the Contract to the second or third lowest Bidder and the bid security of the lowest Bidder may be forfeited.

## 16. LICENSING REQUIREMENTS.

Pursuant to Business and Professions Code Section 7028.15 and Public Contract Code Section 3300, all Bidders must possess proper licenses for performance of the Contract. Subcontractors must possess the appropriate licenses for each specialty subcontracted. Pursuant to Business and Professions Code Section 7028.5, the Agency shall consider any Bid submitted by a contractor



not currently licensed in accordance with California law and pursuant to the requirements found in the Contract Documents to be nonresponsive, and the Agency shall reject the Bid. The Agency shall have the right to request, and Bidders shall provide within 10 Calendar Days, evidence satisfactory to the Agency of all valid license(s) currently held by that Bidder and each of the Bidder's Subcontractors, before awarding the Contract.

Notwithstanding anything contained in this Contract, if the Work involves federal funds, the Contractor shall be properly licensed by the time the Contract is awarded, pursuant to the provisions of Public Contract Code Section 20103.5.

## 17. SUBCONTRACTORS.

Bidder shall set forth the name, address of the place of business, and contractor license number of each Subcontractor who will perform work, labor, furnish materials or render services to the bidder on the Contract. This requirement includes each Subcontractor licensed by the State of California who, under subcontract to Bidder, specially fabricates and installs a portion of the Work described in the Drawings and Specifications in an amount in excess of one-half of one percent (0.5%) of the total Bid price. Additionally, the Bidder shall indicate the portion of the Work to be done by each Subcontractor in accordance with Public Contract Code Section 4104.

Bidder shall submit Proposed Subcontractors Form (00 43 30) with the Bid Package.

This form will be used by the Agency to determine the percentage of work that the Bidder proposes to perform. Bidders are cautioned that failure to provide complete and correct information may result in rejection of the Bid as non-responsive. Any Bid that proposes performance of more than 50 percent of the Work by Subcontractors or performance by forces other than the Bidder's own organization will be rejected as non-responsive. Specialty items of work that may be so designated on the Proposed Subcontractors Form (00 43 30) "Contractor's Bid" will not be included in computing the percentage of work proposed to be performed by the Bidder.

Suppliers of materials from sources outside the limits of Work are not Subcontractors. The value of materials and transport of materials from sources outside the limits of Work, as shown on the plans, shall be assigned to the Contractor or the Subcontractor, as the case may be, that the Bidder proposes as installer of the materials. The value of material incorporated in any Subcontractor-installed Bid item that is supplied by the Bidder shall be included as a part of the Work that the Bidder proposes to be performed by the Subcontractor installing the item.

When the Bidder proposes to use a Subcontractor to construct or install less than 100 percent of a Bid item, the Bidder shall attach an explanation sheet to the Proposed Subcontractor Form (00 43 30). The explanation sheet shall clearly apprise the Agency of the specific facts that show the Bidder proposes to perform no less than fifty percent (50%) of the Work with its own forces.



Determination of the subcontract amounts for purposes of award of the Contract shall be determined by the Board in conformance with the provisions of the Contract Documents. The decision of the Board shall be final.

Contractor is prohibited from performing any Work on this Project with a Subcontractor who is ineligible to perform work on a public works project pursuant to Labor Code Section 1771.1 or 1777.7.

Bidders shall make copies of the disclosure forms as may be necessary to provide the required information to Subcontractors. The page number and total number of additional form pages shall be entered in the location provided on each type of form so duplicated.

#### **18. BIDDER INFORMATION AND EXPERIENCE FORM.**

Each Bidder shall complete the provided questionnaire and shall submit the questionnaire along with its Bid. Failure to provide all information requested within the questionnaire along with the Bid may cause the Bid to be rejected as non-responsive. The Agency may reject any Bid if an investigation of the information submitted does not satisfy the Agency that the Bidder is qualified to properly carry out the terms of the Contract.

The Bidder shall submit Bidder Information and Experience Form (00 43 40) with the Bid Package.

#### **19. NON-COLLUSION AFFIDAVIT.**

Bidders on all public works contracts are required to submit an affidavit of non-collusion with their Bid. This form (00 45 10 Non-Collusion Affidavit) is included with the Bid Package and must be signed and dated under penalty of perjury.

#### **20. IRAN CONTRACTING ACT OF 2010.**

In accordance with Public Contract Code Section 2200 *et seq.*, the Agency requires that any person that submits a bid or proposal or otherwise proposes to enter into or renew a contract with the Agency with respect to goods or services of \$1,000,000 or more, certify at the time the bid is submitted or the contract is renewed, that the person is not identified on a list created pursuant to subdivision (b) of Public Contract Code Section 2203 as a person engaging in investment activities in Iran described in subdivision (a) of Public Contract Code Section 2202.5, or as a person described in subdivision (b) of Public Contract Code Section 2202.5, as applicable.

The form of such Iran Contracting Certificate is included with the Bid Package and must be signed and dated under penalty of perjury.

#### **21. PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION.**

Pursuant to Labor Code Section 1773, the Agency has obtained the prevailing rate of per diem wages and the prevailing wage rate for holiday and overtime work applicable in San Diego County from the Director of the Department of Industrial Relations for each craft, classification, or type



of worker needed to execute this Contract. A copy of these prevailing wage rates may be obtained via the internet at [www.dir.ca.gov/dlsr/](http://www.dir.ca.gov/dlsr/).

In addition, a copy of the prevailing rate of per diem wages is available at the Agency and shall be made available to interested parties upon request. The successful Bidder shall post a copy of the prevailing wage rates at each job site. It shall be mandatory upon the Bidder to whom the Contract is awarded, and upon any Subcontractors, to comply with all Labor Code provisions, which include but are not limited to the payment of not less than the specified prevailing wage rates to all workers employed by them in the execution of the Contract, employment of apprentices, hours of labor and debarment of contractors and subcontractors.

Pursuant to Labor Code Sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work. If awarded the Contract, the Bidder and its Subcontractors, of any tier, shall maintain active registration with the Department of Industrial Relations for the duration of the Project.

This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. In bidding on this Project, it shall be the Bidder's sole responsibility to evaluate and include the cost of complying with all labor compliance requirements under the Contract and applicable law in its Bid.

To this end, Bidder shall sign and submit with its Bid the Public Works Contractor Registration Certification on the form provided, attesting to the facts contained in the registration certificate. Failure to submit this certificate may render the Bid non-responsive. In addition, each Bidder shall provide the registration number for each listed Subcontractor in the space provided in the Proposed Subcontractors Form (00 43 30).

## 22. PREVAILING WAGES.

Pursuant to Labor Code Sections 1720, *et. seq.* and 1770, *et. seq.*, Contractor shall pay prevailing wages for all Work performed under the Contract. The Agency has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages in the locality in which the Work will be performed for each craft or type of worker needed to execute the Contract. These rates are available at the Agency or may be obtained online at <http://www.dir.ca.gov>. Bidders are advised that a copy of these rates must be posted by the successful Bidder at the job site(s).

## 23. DEBARMENT OF CONTRACTORS AND SUBCONTRACTORS.

In accordance with the provisions of the Labor Code, contractors or subcontractors may not perform work on a public works project with a subcontractor who is ineligible to perform work on a public project pursuant to Labor Code Section 1777.1 or 1777.7. Any contract on a public



works project executed between a contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract. Any public money that is paid to a debarred subcontractor by the Contractor for the Project shall be returned to the Agency. The Contractor shall be responsible for the payment of wages to workers of a debarred Subcontractor who has been allowed to work on the Project.

The Agency may disqualify a Contractor or Subcontractor from participating in bidding when a Contractor or Subcontractor has been debarred by the Agency or another jurisdiction in the State of California as an irresponsible bidder.

## 24. SIGNING OF BIDS.

All Bids submitted shall be executed by the Bidder or its authorized representative. Bidders may be asked to provide evidence in the form of an authenticated resolution of its Board of Directors or a Power of Attorney evidencing the capacity of the person signing the Bid to bind the Bidder to each Bid and to any Contract arising therefrom.

If a Bidder is a joint venture or partnership, it may be asked to submit an authenticated Power of Attorney executed by each joint venturer or partner appointing and designating one of the joint venturers or partners as a management sponsor to execute the Bid on behalf of Bidder. Only that joint venturer or partner shall execute the Bid. The Power of Attorney shall also: (1) authorize that particular joint venturer or partner to act for and bind Bidder in all matters relating to the Bid; and (2) provide that each venturer or partner shall be jointly and severally liable for any and all of the duties and obligations that the Bidder assumes under the Bid and under any Contract arising therefrom. The Bid shall be executed by the designated joint venturer or partner on behalf of the joint venture or partnership in its legal name.

## 25. SUBMISSION OF SEALED BIDS.

Once the Bid and supporting documents have been completed and signed as set forth in these Instructions to Bidders, they shall be uploaded, along with other required materials, to the online bidding portal before the deadline for submitting bids.

At the time of Bid submission, whether in the form of a cashier's check, a properly certified check or an approved corporate surety bond payable to the Agency, Bidders must upload an electronic Portable Document Format (PDF) copy of the Bid Guarantee to the online bidding portal. The first 3 apparent low Bidders must provide the Agency with the original Bid Guarantee within 2 Business Days after the Bid opening date.

Failure to submit the electronic version of the Bid Guarantee at time of bid submission shall cause the bid to be rejected and deemed **non-responsive**. Failure to provide the original within 2 business days may deem the bidder **non-responsive**.

Original Bid Bond shall be submitted to:



Public Works Contract Administration  
Attention: Graham Jordan, Contract Administrator  
1635  
Carlsbad, California, 92008

Faraday

Avenue

No oral or telephonic Bids will be considered. Pursuant to Public Contract Code Sections 1600 and 1601, only where expressly permitted in these Instructions to Bidders and the Notice Inviting Bids may Bidders submit their Bids via electronic transmission (the online bidding portal). Bids received after the Bid Submission Deadline will not be accepted. Agency may reject any Bid not strictly complying with Agency's designated methods for delivery.

## 26. OPENING OF BIDS.

Bids submitted on the online bidding portal will be reviewed by the Agency. Once the Bid Submission Deadline has passed, Bidders, proposers, the general public, and Agency staff are able to immediately see the results online. Agency shall consider award of the Contract to the lowest, responsive, responsible Bidder as determined by the Agency consistent with Section 32 below. In case of a discrepancy between the line item entries submitted in the online bidding portal and the Bid Form, the online bidding portal shall prevail. In the event of any discrepancies, written numbers (e.g., fifty, hundred) will govern over numerical numbers (e.g., 50, 100) on the Bid Form.

In the event of any discrepancies, written numbers (e.g., fifty, hundred) will govern over numerical numbers (e.g., 50, 100) on the Price Proposal Form. Also, the sum of all lump sum line items will govern over the "Total Proposed Lump Sum Price" line item. The Agency may reject any or all Bids or waive any irregularities or informalities in any Bids or in the Bidding process.

The Bid and the terms of the Contract Documents constitute an irrevocable offer that shall remain valid and in full force for a period of 90 Calendar Days from the Bid Submission Deadline and such additional time as may be mutually agreed upon by the Agency and the Bidder.

## 27. WITHDRAWAL OF BID.

Any Bid may be withdrawn via written letter, incurring no penalty, at any time before the scheduled closing time for receipt of Bids. Requests to withdraw Bids shall be worded to not reveal the amount of the original Bid. Withdrawn Bids may be resubmitted until the Bid Submission Deadline, provided that resubmitted Bids are in conformance with these Instructions to Bidders.

Bids may be withdrawn after bid opening only by providing written notice to Agency within five (5) Working Days of the bid opening and in compliance with Public Contract Code Section 5100 *et seq.*, or as otherwise may be allowed with the consent of the Agency.



## **28. BIDDERS INTERESTED IN MORE THAN ONE BID.**

No Bidder shall be allowed to make, file or be interested in more than 1 Bid for the same work unless alternate Bids are specifically called for. If the Notice Inviting Bids provides for alternate Bids, a person, firm or corporation that has submitted a sub-proposal to a Bidder, or that has quoted prices of materials to a Bidder, is not disqualified from submitting a sub-proposal or quoting prices to other Bidders. No person, firm, corporation, or other entity may submit a sub-proposal to a Bidder, or quote prices of materials to a Bidder, when also submitting a prime Bid on the same Project.

## **29. SALES AND OTHER APPLICABLE TAXES, PERMITS, LICENSES, AND FEES.**

Contractor and its Subcontractors performing work under the Contract will be required to pay California sales tax and other applicable taxes, and to pay for permits, licenses and fees required by the agencies with authority in the jurisdiction in which the Work will be located, unless otherwise expressly provided by the Contract Documents.

## **30. PERMIT AND INSPECTION FEE ALLOWANCE.**

Notwithstanding anything contained in these Instructions to Bidders, the Bid Form contains an allowance for the Contractor's cost of acquiring traffic control permits and for construction inspection fees that may be charged to the Contractor by the Agency. The allowance is included within the Bid Form to eliminate the need by Bidders to research or estimate the costs of traffic control permits and construction inspection fees before submitting a Bid. The allowance is specifically intended to account for the costs of traffic control permits and construction inspection fees charged by the Agency. No other costs payable by Contractor to the Agency are included within the allowance.

If such cost is not contained or specified in the Bid Form, the Contractor shall include the costs in the other Bid items on the Bid Form.

## **31. BASIS OF AWARD; BALANCED BID.**

The Agency shall award the Contract to the lowest responsible Bidder submitting a responsive Bid. The lowest Bid will be determined on the basis of the total Bid price. In the event of any discrepancies, written numbers (e.g., fifty, hundred) will govern over numerical numbers (e.g., 50, 100) on the Price Proposal Form. Also, the sum of all lump sum line items will govern over the "Total Proposed Lump Sum Price" line item.

The Agency may reject any Bid which, in its opinion when compared to other Bids received or to the Agency's internal estimates, does not accurately reflect the cost to perform the Work. The Agency may reject as non-responsive any Bid which unevenly weights or allocates costs, including but not limited to overhead and profit to 1 or more particular Bid items or otherwise violates Public Contract Code Section 9203.



### **32. AWARD PROCESS.**

Once all Bids are opened and reviewed to determine the lowest responsive and responsible Bidder, the Board may award the Contract. Once notified by Agency staff, the apparent successful Bidder should begin to prepare the following documents: (1) the Labor and Materials Bond; (2) the Performance and Warranty Bond; and (3) the required insurance certificates and endorsements. Once the Agency notifies the Bidder of the award, the Bidder will have 10 Working Days from the date of this notification to execute the Contract and supply the Agency with all of the required documents and certifications or the Bidder may forfeit the Bid security and the Agency may pursue award of the Contract to the next lowest, responsive, responsible Bidder. Once the Agency receives all properly drafted and executed documents and certifications from the Bidder, the Agency shall issue a Notice to Proceed to that Bidder.

### **33. EXECUTION OF CONTRACT.**

As required in these Instructions to Bidders, the Bidder to whom an award is made shall execute the Contract in the amount determined by the Contract Documents. The Agency may require appropriate evidence that the persons executing the Contract are duly empowered to do so. The Contract and bond forms to be executed by the successful Bidder are included within these Specifications and shall not be detached.

### **34. BUSINESS LICENSE.**

The prime Contractor and all Subcontractors are required to have and maintain a valid City of Carlsbad Business License for the duration of the Contract.

### **35. PARTICIPATION OF MINORITY AND WOMEN-OWNED BUSINESSES.**

The Agency encourages the participation of minority and women-owned businesses.

### **36. USE OF RECYCLED MATERIALS.**

The Agency encourages Bidders, suppliers, manufacturers, fabricators and contractors to utilize recycled and recyclable materials when available, appropriate and approved by the Agency's Engineer.

### **37. STATUTORY REFERENCES.**

All references in these Instructions to Bidders (00 21 10) to any statute, rule or regulation are to the statute, rule or regulation as amended, modified, supplemented or replaced from time to time by the corresponding legislative or regulatory body.

## **END OF SECTION**



## 00 41 00 BID FORM

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

**AGENCY:** City of Carlsbad  
1635 Faraday Ave  
Carlsbad, CA 92008

The undersigned declares that we have carefully examined the location of the proposed Work, and have read and examined the Contract Documents, including all Plans, Specifications, and Addenda, if any, for the above-mentioned Project. The undersigned has acknowledged receipt, understanding, and full consideration of ANY and ALL Addenda to the Contract Documents via the online bidding portal.

We propose to furnish all labor, materials, equipment, tools, transportation, and services, and to discharge all duties and obligations necessary and required to perform and complete the Project, as described and in strict conformity with the Drawings, and these Specifications for TOTAL BID PRICE.

- Attached is the required Bid Bond (00 43 10) or Bid Security (00 43 20) in the amount of not less than 10% of the Total Bid Price.
- Attached is the completed Proposed Subcontractors form (00 43 30).
- Attached is the completed Bidder Information and Experience form (00 45 40)
- Attached is the fully executed Non-collusion Affidavit (00 45 10).
- Attached is the completed Iran Contracting Act Certification form (00 45 15).
- Attached is the completed Public Works Contractor Registration Certification form (00 45 20).
- Attached is the completed Certificate of Insurance form (00 45 25).
- Attached is the Statement of Regarding Debarment form (00 45 30)
- Attached is the Disclosure of Discipline Record (00 45 35)
- Attached is the CARB Fleet Compliance Certification (Attachment E)
- Attached is the Optional Escrow Agreement (if applicable) (00 61 30)



## 1. BID SCHEDULE.

Item No.	Item Description	Unit of Measure	Quantity	Unit Price	Total
1	Mobilization	1	LS		
2	Construction Schedule	1	LS		
3	Erosion Control and Water Pollution Control	1	LS		
4	Temporary Traffic Control	1	LS		
5	Clearing And Grubbing	1	LS		
6	Asphalt Concrete	891	TON		
7	Aggregate Base	969	CY		
8	Unclassified Excavation	5,320	CY		
9	Concrete Sidewalk	92	CY		
10	Concrete Driveway	2	CY		
11	Concrete Curb Ramp	12	CY		
12	Concrete Cross Gutter	19	CY		
13	Concrete Curb And Gutter	1,624	LF		
14	Asphalt Concrete Dike	43	LF		
15	Cold Mill Asphalt Concrete	522	SQYD		
16	Gravity Retaining Wall - Type A	2	CY		
17	Gravity Retaining Wall - Type C	6	CY		
18	Porous Sidewalk	1,543	SQFT		
19	Salvage And Relocate Mailbox	1	EA		
20	18" Rcp (1350-D)	229	LF		
21	36" Rcp (1350-D)	54	LF		
22	Straight Headwall	1	EA		
23	Biofiltration Bmp	1,625	SQFT		
24	8" Pvc (Perforated)	335	LF		
25	8" Pvc (Non-Perforated)	209	LF		
26	Curb Outlet	1	EA		
27	Curb Inlet - Type B (L=5')	1	EA		
28	Curb Inlet - Type B-2 (L=11')	1	EA		
29	Storm Drain Cleanout Type - A	1	EA		
30	24"X24" Cleanout	1	EA		
31	8" Subdrain Cleanout	3	EA		
32	8" Overflow Riser Cleanout	3	EA		
33	Observation Well	3	EA		
34	Structure Excavation (Retaining Wall)	2,145	CY		
35	Structure Backfill (Retaining Wall)	2,800	CY		
36	Structure Concrete, Retaining Wall	460	CY		
37	Bar Reinforcing Concrete, Retaining Wall	69,000	LB		
38	Stained Concrete Surfacing	4,851	SF		
39	Anti-Graffiti Coating	4,851	SF		



40	Black Vinyl Coated Chain Link Railing	419	LF		
41	Striping and Markings	1	LS		
42	Striping Removal	1	LS		
43	Signing	1	LS		
44	Adjust Water Meter to Grade	2	EA		
45	Install 2" Water Service	1	EA		
46	Install 2" Air-Vacuum Valve Assembly and Appurtenance	2	EA		
47	Lighting System	1	LS		
48	Traffic Signal	1	LS		
49	Irrigation	1	LS		
50	Planting	1	LS		
51	Initial 120 Day Maintenance	1	LS		
52	Tree Removal, Stump Grinding, and Disposal	12	EA		
53	Slurry Seal	12,100	SY		

The costs for any Work shown or required in the Contract Documents, but not specifically identified as a line item are to be included in the related line items and no additional compensation shall be due to Contractor for the performance of the Work.

The estimated quantities for Unit Price items are for purposes of comparing Bids only and the Agency makes no representation that the actual quantities of Work performed will not vary from the estimates. Final payment shall be determined by the Engineer from measured quantities of Work performed based upon the Unit Price.

## 2. TOTAL BID PRICE.

<p>The TOTAL BID PRICE on Bid Schedule total of Unit Prices:</p> <p>Total Bid Price in Numbers: _____</p> <p>Total Bid Price in Written Form: _____</p> <p>In case of discrepancy between the written price, the numerical price, or the price as submitted via the online bidding portal, the online bidding portal price shall prevail.</p>
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The undersigned agrees that this Bid Form constitutes a firm offer to the Agency which cannot be withdrawn for ninety (90) Calendar Days from and after the Bid opening, or until a Contract for the Work is fully executed by the Agency and the lowest responsible Bidder, whichever is later.



The Undersigned has carefully checked all the above figures and understands that the Agency will not be responsible for any error or omission on the part of the Undersigned in preparing this Bid.

### 3. RECITALS.

The successful Bidder agrees to sign the Contract and furnish the necessary bonds and certificates of insurance within 10 Working Days after the Agency issues the Notice of Award to the successful Bidder.

The Undersigned agrees that in case of failure to execute the required Contract with necessary bonds and insurance policies within this time period, the Agency may pursue awarding the Contract to the next lowest responsible Bidder and the Bid Security of the lowest Bidder may be forfeited.

Upon receipt of the signed Contract and other required documents, the Agency will proceed to execute the Contract and issue a purchase order and the Notice to Proceed. The time of completion shall commence on the date of the Notice to Proceed, unless otherwise specified. The undersigned agrees to begin the Work within 10 Working Days of the date of the Notice to Proceed, unless otherwise specified.

The Undersigned is aware of the provisions of Labor Code Section 3700, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and agrees to comply with such provisions before commencing the performance of the Work of this Contract and continue to comply until the Contract is complete.

The Undersigned is aware of the provisions of Labor Code Section 1770 *et seq.* relative to the general prevailing rate of wages for each craft or type of worker needed to execute the Contract and agrees to comply with its provisions.

The Undersigned Bidder declares, under penalty of perjury, that the undersigned is licensed to do business or act in the capacity of a contractor within the State of California and that this statement is true and correct and has the legal effect of an affidavit. The following are the Bidder's applicable license number(s), with their expiration date(s) and class of license(s):

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If the Bidder is a joint venture, each member of the joint venture must include the required licensing information.



A Bid submitted to the Agency by a Contractor who is not licensed as a Contractor pursuant to the Business and Professions Code shall be considered nonresponsive and shall be rejected by the Agency. In all contracts where federal funds are involved, no Bid submitted shall be invalidated by the failure of the Bidder to be licensed in accordance with California law. However, at the time the Contract is awarded, the Contractor shall be properly licensed.

The Undersigned Bidder represents as follows:

1. That no elected or appointed official, officer, agent, or employee of the Agency is personally interested, directly or indirectly, in this Contract, or the compensation to be paid under it; that no representation, oral or in writing, of the Agency, its officers, agents, or employees has induced Bidder to enter into this Contract, excepting only those contained in this form of Contract and the papers made a part of this Contract by its terms; and
2. That this Bid is made without connection with any person, firm, or corporation making a Bid for the same Work, and is in all respects fair and without collusion or fraud.

Accompanying this Bid is \_\_\_\_\_ (Cash, Certified Check, Bidder's Bond or Cashier's Check) for 10% of the amount Bid, payable to Agency as Bid Security and which is given as a guarantee that the undersigned will enter into a Contract and provide the necessary bonds and certificates of insurance if awarded the Contract.

Organized under the laws of the State of \_\_\_\_\_.

- an individual
- a partnership
- a corporation

**(Signatures continue on next page)**



**IF A SOLE OWNER OR SOLE CONTRACTOR SIGN HERE:**

I certify under penalty of perjury under the laws of the State of California that all of the information submitted in connection with this Bid and all of the representations made in this Bid are true and correct.

1 Name under which  
business is  
conducted \_\_\_\_\_

2 Signature (given and  
surname) of  
proprietor \_\_\_\_\_

Printed/Typed Name \_\_\_\_\_

3 Place of Business  
(Full Address: street,  
number, city, state,  
zip) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4 Telephone Number \_\_\_\_\_

5 Email \_\_\_\_\_

**NOTARIAL ACKNOWLEDGMENT OF EXECUTION BY ALL SIGNATORIES MUST BE ATTACHED**



**IF A PARTNERSHIP, SIGN HERE:**

I certify under penalty of perjury under the laws of the State of California that all of the information submitted in connection with this Bid and all of the representations made in this Bid are true and correct.

1 Name under which  
business is  
conducted \_\_\_\_\_

2 Signature (given and  
surname and role)  
(Note: Signature  
must be made by a  
general partner) \_\_\_\_\_

Printed/Typed Name \_\_\_\_\_

3 Place of Business  
(Full Address: street,  
number, city, state,  
zip) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4 Telephone Number \_\_\_\_\_

5 Email \_\_\_\_\_

**NOTARIAL ACKNOWLEDGMENT OF EXECUTION BY ALL SIGNATORIES MUST BE ATTACHED**



**IF A CORPORATION, SIGN HERE:**

I certify under penalty of perjury under the laws of the State of California that all of the information submitted in connection with this Bid and all of the representations made in this Bid are true and correct.

1 Name under which business is conducted \_\_\_\_\_

2 Signature (given and surname and Title)  
(Note: Signature must be made by a someone who can bind the corporation) \_\_\_\_\_

Printed/Typed Name \_\_\_\_\_

3 Place of Business  
(Full Address: street, number, city, state, zip) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4 Telephone Number \_\_\_\_\_

5 Email \_\_\_\_\_

**NOTARIAL ACKNOWLEDGMENT OF EXECUTION BY ALL SIGNATORIES MUST BE ATTACHED**



List below names of president, vice president, CFO, secretary and assistant secretary, if a corporation; if a partnership, list names of all general partners, and managing partners:


Approved as to form this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

\_\_\_\_\_  
Attorney for Agency

**END OF SECTION**



**00 43 10 BID BOND FORM**

(Note: This form is not required when other form of Bidder’s Security, e.g. cash, certified check or cashier’s check, accompanies Bid. In that case, use form 00 43 20 Bid Security)

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID No.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

The makers of this bond are, \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, and are held and firmly bound unto the City of Carlsbad (“Agency”) in the penal sum of 10% OF THE TOTAL BID PRICE of the Principal submitted to the Agency for the Work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted the accompanying Bid dated \_\_\_\_\_.

If the Principal does not withdraw its Bid within the time specified in the Contract Documents; and if the Principal provides all required documents to the Agency and is awarded the Contract; then this obligation shall be null and void. Otherwise, this bond will remain in full force and effect.

Surety, for value received, stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents shall affect its obligation under this bond, and Surety waives notice of any such changes.

In the event a lawsuit is brought upon this bond by the Agency and judgment is recovered, the Surety shall pay all litigation expenses incurred by the Agency in such suit, including reasonable attorneys’ fees, court costs, expert witness fees and expenses.

///

///

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///



IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the name and corporate seal of each corporation.

PRINCIPAL:

Executed by SURETY

\_\_\_\_\_  
(Name of Principal)

this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

By:

SURETY:

\_\_\_\_\_  
(sign here)

\_\_\_\_\_  
(name of Surety)

\_\_\_\_\_  
(Print name here)

\_\_\_\_\_  
(address of Surety)

\_\_\_\_\_  
(Title and Organization of Signatory)

\_\_\_\_\_  
(telephone number of Surety)

By:

\_\_\_\_\_  
(signature of Attorney-in-Fact)

\_\_\_\_\_  
(printed name of Attorney-in-Fact)

**Required Attachments:**

- Corporate resolution showing current power of attorney.
- Proper execution by PRINCIPAL.
- Proper notarial acknowledgment of execution by SURETY.
- President or vice-president and CFO, secretary or assistant secretary must sign for corporations. If only 1 officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering that officer to bind the corporation.

**END OF SECTION**



## 00 43 20 BID SECURITY

(Note: This form is required when cash, certified check or cashier's check, accompanies Bid. If Bid Bond is being provided, use form 00 43 10 Bid Bond)

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

Accompanying this proposal is a Certified / Cashier's check payable to the order of the City of Carlsbad ("Agency"), in the sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), this amount being 10% of the total amount of the Bid. The proceeds of this check shall become the property of the Agency, provided this proposal shall be accepted by the Agency through action of its legally constituted contracting authorities and the Undersigned shall fail to execute a Contract and furnish the required Performance, Warranty and Payment Bonds and proof of insurance coverage within the stipulated time; otherwise, the check shall be returned to the Undersigned. The proceeds of this check shall also become the property of the Agency if the Undersigned shall withdraw his or her Bid within the period of 15 Calendar Days after the date set for the opening of the Bid, unless otherwise required by law, and notwithstanding the award of the Contract to another Bidder.

\_\_\_\_\_  
BIDDER

Required Attachments:

- Certified Check or Cashier's Check

**END OF SECTION**



00 43 30 PROPOSED SUBCONTRACTORS FORM

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

In compliance with the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100 *et seq.*), Bidder shall set forth below: (a) the name and the location of the place of business, (b) the California contractor license number, (c) the DIR public works contractor registration number, and (d) the portion of the Work which will be done by each Subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the Work or improvement to be performed under this Contract in an amount in excess of one-half of one percent (0.5%) of the Bidder's Total Bid Price. Notwithstanding the foregoing, if the Work involves the construction of streets and highways, then the Bidder shall list each Subcontractor who will perform work or labor or render service to the Bidder in or about the Work in an amount in excess of one-half of one percent (0.5%) of the Bidder's Total Bid Price or \$10,000, whichever is greater. No additional time shall be granted to provide the below requested information.

If a Bidder fails to specify a Subcontractor or if a Contractor specifies more than one Subcontractor for the same portion of Work, then the Bidder shall be deemed to have agreed that it is fully qualified to perform that portion of Work and that it shall perform that portion itself. No changes in the Subcontractor's listed Work will be made without the prior approval of the Agency.

Attach additional pages as required.

\_\_\_\_\_  
(Signature of Bidder)



Name of Subcontractor	Location of Business	CSLB Contractor License No./ Exp Date	DIR Registration Number / Exp. Date	Type of Work to be done by Subcontractor	% of Work	Amount of Work by Subcontractor in Dollars*

Pursuant to Public Contract Code Section 4104, subdivision (a)(3)(A), receipt of the information preceded by an asterisk (\*) may be submitted by the Bidder up to 24 hours after the deadline for submitting bids contained in the "Notice Inviting Bids".

**END OF SECTION**



00 43 40 BIDDER INFORMATION AND EXPERIENCE FORM

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

**1. INFORMATION ABOUT BIDDER.**

(Indicate not applicable (“N/A”) where appropriate.)

NOTE: Where Bidder is a joint venture, pages shall be duplicated, and information provided for all parties to the joint venture.

1. Type, if Entity: \_\_\_\_\_

2. Bidder Address: \_\_\_\_\_

a. Facsimile Number \_\_\_\_\_

b. Telephone Number \_\_\_\_\_

c. Email Address \_\_\_\_\_

3. How many years has Bidder’s organization been in business as a contractor? \_\_\_\_\_

4. How many years has Bidder’s organization been in business under its present name? \_\_\_\_\_

a. Under what other or former names has Bidder’s organization operated?  
\_\_\_\_\_

5. If Bidder’s organization is a corporation, answer the following:

a. Date of Incorporation: \_\_\_\_\_

b. State of Incorporation: \_\_\_\_\_

c. President’s Name: \_\_\_\_\_

d. Vice-President’s Name(s): \_\_\_\_\_

e. Secretary’s Name: \_\_\_\_\_

f. Treasurer’s Name: \_\_\_\_\_

g. CFO's Name: \_\_\_\_\_

6. If an individual or a partnership, answer the following:

a. Date of Organization: \_\_\_\_\_

b. Name and address of all partners (state whether general or limited partnership):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. If other than a corporation or partnership, describe organization and name principals:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. List other states in which Bidder's organization is legally qualified to do business.

\_\_\_\_\_

9. What type of work does the Bidder normally perform with its own forces?

\_\_\_\_\_

10. Has Bidder ever failed to complete any work awarded to it? If so, note when, where, and why:

\_\_\_\_\_

11. Within the last 5 years, has any officer or partner of Bidder's organization ever been an officer or partner of another organization when it failed to complete a contract? If so, attach a separate sheet of explanation:

\_\_\_\_\_

12. List Trade References: \_\_\_\_\_

13. List Bank References (Bank and Branch Address):

\_\_\_\_\_

14. Name of Bonding Company and Name and Address of Agent:

\_\_\_\_\_

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]



## 2. LIST OF CURRENT PROJECTS (BACKLOG).

[\*\*Duplicate or attach additional pages if needed for listing current projects.\*\*]

<b>Project Name Sub or Prime?</b>	<b>Description of Bidder's Work</b>	<b>Client Name</b>	<b>Completion Date</b>	<b>Cost of Bidder's Work</b>

**LIST OF COMPLETED PROJECTS (LAST 3 YEARS)**

[\*\*Duplicate or attach additional pages if needed for listing completed projects. \*\*]

Please include only those projects which are similar enough to demonstrate Bidder’s ability to perform the required Work.

<b>Project Name Sub or Prime?</b>	<b>Description of Bidder’s Work</b>	<b>Client Name</b>	<b>Completion Date</b>	<b>Cost of Bidder’s Work</b>



## EXPERIENCE AND TECHNICAL QUALIFICATIONS QUESTIONNAIRE

**Personnel:**

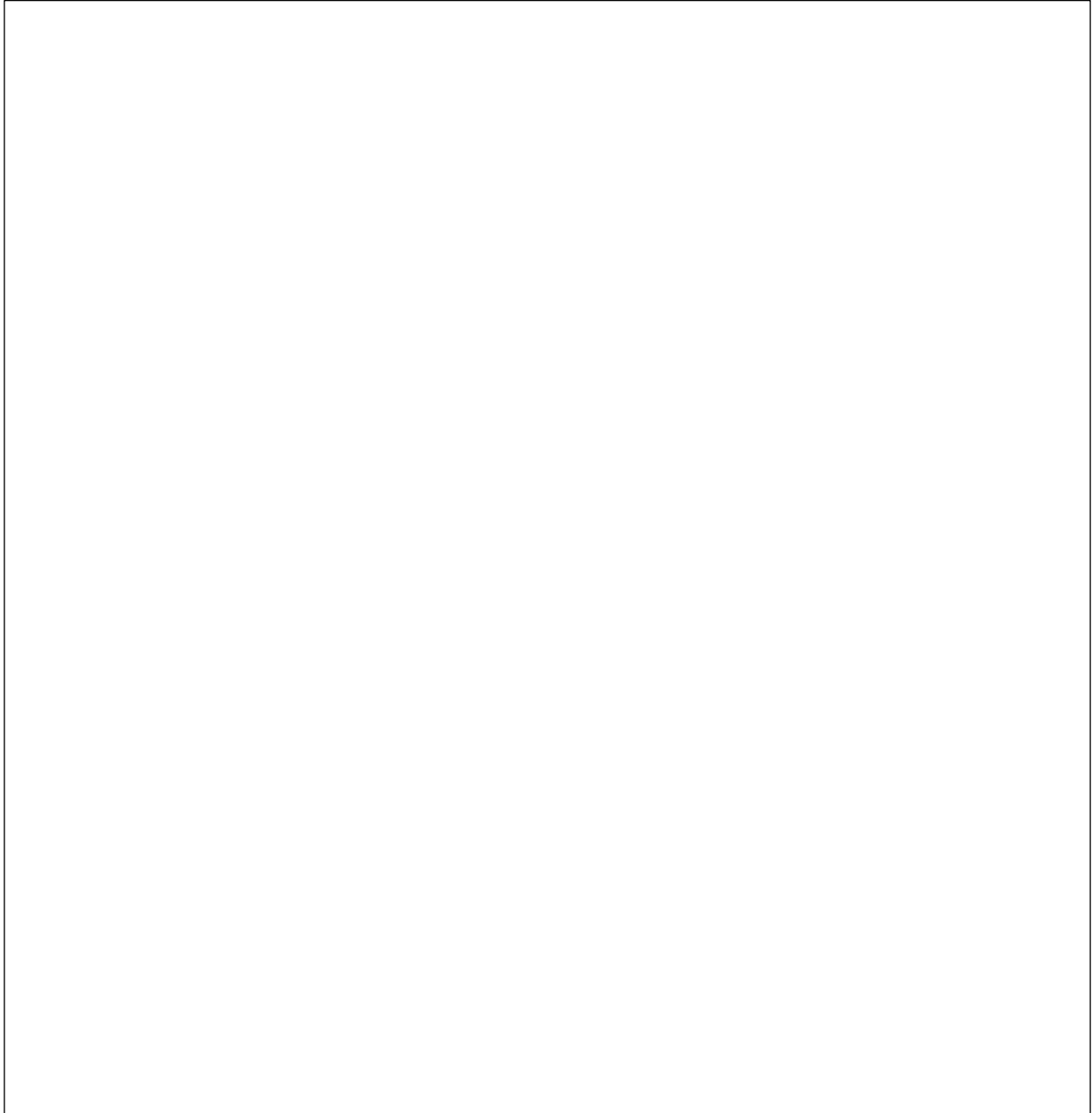
The Bidder shall identify the key personnel to be assigned to this Project in a management, construction supervision or engineering capacity. Add additional pages to identify ALL key personnel. Bidder may submit a 2-page resume of each key personnel mentioned above.

Bidder agrees that personnel named in this Bid will remain on this Project until completion of all relevant Work, unless substituted by personnel of equivalent experience and qualifications approved in advance by the Agency.

Job Title Name % time on this Project	Specialized Education	Years of construction experience relevant to the Project	Summarize the experience

**Additional Bidder's Statements:**

If the Bidder feels that there is additional information which has not been included in the questionnaire above, and which would contribute to the qualification review, it may add that information in a statement here or on an attached sheet, appropriately marked:





### 3. VERIFICATION AND EXECUTION.

These Bid Forms shall be executed only by a duly authorized official of the Bidder:

I declare under penalty of perjury under the laws of the State of California that the foregoing information is true and correct:

Name of Bidder: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**END OF SECTION**

## 00 45 10 NON-COLLUSION AFFIDAVIT

### NONCOLLUSION DECLARATION TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

**NAME OF PROJECT:** El Camino Real Widening From Sunny Creek Road to Jackspar Drive

**NAME OF BIDDER:** \_\_\_\_\_

Consistent with Public Contract Code Section 7106, the undersigned declares:

I am the \_\_\_\_\_ of \_\_\_\_\_, the party making the foregoing Bid.

The Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The Bid is genuine and not collusive or sham. The Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham bid. The Bidder has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham bid, or to refrain from bidding. The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Bid Price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the Bid Price, or of that of any other Bidder. All statements contained in the Bid are true. The Bidder has not, directly or indirectly, submitted his or her Bid Price or any breakdown of it, or the contents of it, or divulged information or data relative to it, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent of these, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a Bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, represents that he or she has full power to execute, and does execute, this declaration on behalf of the Bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed \_\_\_\_\_ 20\_\_ at \_\_\_\_\_ [city], \_\_\_\_\_ [state].

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

## END OF SECTION



## 00 45 15 IRAN CONTRACTING ACT CERTIFICATION

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

As required by Public Contract Code Section 2204, the Contractor certifies subject to penalty of perjury that the option checked below relating to the Contractor's status in regard to the Iran Contracting Act of 2010 (Public Contract Code Section 2200 et seq.) is true and correct:

The Contractor is not:

1. identified on the current list of persons and entities engaged in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203; or
2. a financial instruction that extends, for 45 days or more, credit in the amount of \$20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.

The Agency has exempted the Contractor from the requirements of the Iran Contracting Act of 2010 after making a public finding that, absent the exemption, the Agency will be unable to obtain the goods and/or services to be provided pursuant to the Contract.

The amount of the Contract payable to the Contractor for the Project does not exceed \$1,000,000.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Note: In accordance with Public Contract Code Section 2205, false certification of this form shall be reported to the California Attorney General and may result in civil penalties equal to the greater of \$250,000 or twice the Contract amount, termination of the Contract and/or ineligibility to bid on contracts for 3 years.

## END OF SECTION

## 00 45 20 PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

Pursuant to Labor Code Sections 1725.5 and 1771.1, all Contractors and Subcontractors that wish to Bid on, be listed in a Bid proposal, or enter into a Contract to perform public work must be registered with the Department of Industrial Relations. See [Public Works \(ca.gov\)](https://www.dir.ca.gov) for additional information.

No Bid will be accepted, nor any Contract entered into without proof of the Contractor's and Subcontractors' current registration with the Department of Industrial Relations to perform public work.

Bidder certifies that it is aware of the registration requirements set forth in Labor Code Sections 1725.5 and 1771.1 and is currently registered as a Contractor with the Department of Industrial Relations.

Name of Bidder: \_\_\_\_\_

DIR Registration Number: \_\_\_\_\_

DIR Registration Expiration: \_\_\_\_\_

Bidder further certifies:

1. Bidder shall maintain a current DIR registration for the duration of the Project.
2. Bidder shall include the requirements of Labor Code Sections 1725.5 and 1771.1 in its Contract with Subcontractors and ensure that all Subcontractors are registered at the time of Bid opening and maintain registration status for the duration of the Project.
3. Failure to submit this form or comply with any of the above requirements may result in a finding that the Bid is non-responsive.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

**END OF SECTION**



## 00 45 25 CERTIFICATE OF INSURANCE

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

Bidder must **attach either** of the following to this page.

- Certificates of insurance showing conformance with the requirements for each of:
  - a. Comprehensive General Liability
  - b. Automobile Liability
  - c. Workers Compensation
  - d. Employer's Liability
  
- Statement with an insurance carrier's notarized signature stating that the carrier can, and upon payment of fees and/or premiums by the Bidder, will issue to the Bidder the required policies of insurance for Comprehensive General Liability, Automobile Liability, Workers Compensation and Employer's Liability in conformance and the required Certificates of insurance to the Agency.

**END OF SECTION**

00 45 30 STATEMENT REGARDING DEBARMENT

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

1. Have you or any of your Subcontractors ever been debarred as an irresponsible Bidder by another public agency in the State of California?

- YES
- NO

2. If yes, what was/were the name(s) of the public agency(ies) and what was/were the period(s) of debarment(s)? Attach additional copies of this page to accommodate more than 2 debarments.

_____	_____
party debarred	party debarred
_____	_____
public agency	public agency
_____	_____
period of debarment	period of debarment

BY CONTRACTOR:

By: \_\_\_\_\_  
(sign here)

\_\_\_\_\_  
(print name/title)

Page \_\_\_\_ of \_\_\_\_ pages of this Statement Regarding Debarment form

**END OF SECTION**



## 00 45 35 DISCLOSURE OF DISCIPLINE RECORD

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a latent act or omission is filed within 4 years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within 10 years of the date of the alleged violation. Any questions concerning a Contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.

1. Have you ever had your contractor's license suspended or revoked by the California Contractors' State license Board 2 or more times within an 8-year period?
  - YES
  - NO
  
2. Has the suspension or revocation of your contractor's license ever been stayed?
  - YES
  - NO
  - N/A
  
3. Have any Subcontractors that you propose to perform any portion of the Work ever had their contractor's license suspended or revoked by the California Contractors' State License Board 2 or more times within an 8-year period?
  - YES
  - NO
  
4. Has the suspension or revocation of the license of any Subcontractors that you propose to perform any portion of the Work ever been stayed?
  - YES
  - NO
  - N/A

5. If the answer to either of 1 or 3 above is “yes,” fully identify, in each and every case, the party disciplined, the date of and violation that the disciplinary action pertains to, the nature of the violation and disciplinary action taken.

(If needed attach additional sheets to provide full disclosure.)

6. If the answer to either of 2 or 4 above is “yes,” fully identify, in each and every case, the party whose discipline was stayed, the date of and the violation that the disciplinary action pertains to, the nature of the violation and the condition (if any) upon which the disciplinary action was stayed.

(If needed attach additional sheets to provide full disclosure.)

BY CONTRACTOR:

By: \_\_\_\_\_  
(sign here)

\_\_\_\_\_  
(print name and title)

**END OF SECTION**



## 00 52 00 CONTRACT

This Project No. 6094 ("Contract") is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2024, by and between the City of Carlsbad ("Agency") and \_\_\_\_\_ ("Contractor"), whose principal place of business is \_\_\_\_\_.

The parties agree:

### 1. SCOPE OF WORK.

The Contractor shall perform all Work within the time stipulated in the Contract, and shall provide all labor, materials, equipment, tools, utility services, and transportation to complete all the Work required in strict compliance with the Contract Documents for the following Project:

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

The Contractor and its surety shall be liable to the Agency for any damages arising as a result of the Contractor's failure to comply with the obligation described in this Section 1.

### 2. TIME OF COMPLETION.

Time is of the essence in the performance of the Work. The Work shall be commenced on the date stated in the Agency's Notice to Proceed. The Contractor shall complete all Work required by the Contract Documents within two hundred sixty (260) working days from the commencement date stated in the Notice to Proceed. Contractor agrees the time for completion set forth above is adequate and reasonable to complete the Work.

### 3. CONTRACT PRICE.

The Agency shall pay to the Contractor as full compensation for the performance of the Contract, subject to any additions or deductions made in accordance with the Contract Documents, and including all applicable taxes and costs, the sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_). Payment shall be made as set forth in the General Conditions.

The Engineer will close the estimate of work completed for progress payments on the last working day of each month. The Agency shall withhold retention as required by Public Contract Code Section 9203.

### 4. LIQUIDATED DAMAGES.

In accordance with Government Code Section 53069.85, it is agreed that the Contractor will pay the Agency the sum set forth in Section 00 73 00 Supplemental General Provisions for each and every Calendar Day of delay beyond the time of completion prescribed in this Contract as

Liquidated Damages and not as a penalty or forfeiture. If this sum is not paid, the Contractor agrees the Agency may deduct that amount from any money due or that may become due the Contractor under the Contract. This Section does not exclude recovery of other damages specified in the Contract Documents.

## **5. CONTRACT DOCUMENTS.**

The "Contract Documents" include the following:

- 00 11 10 Notice Inviting Bids
- 00 21 10 Instructions to Bidders
- 00 41 00 Bid Form
- 00 42 10 Bid Bond or 00 43 20 Bid Security
- 00 43 30 Proposed Subcontractors
- 00 43 40 Bidder Information and Experience
- 00 45 10 Non-Collusion Affidavit
- 00 45 15 Iran Contracting Act Certification
- 00 45 20 Public Works Contractor Registration Certification
- 00 45 30 Statement of Regarding Debarment
- 00 45 35 Disclosure of Discipline Record
- 00 52 10 Contract
- 00 61 10 Labor and Materials Bond
- 00 61 20 Faithful Performance and Warranty Bond
- 00 61 30 Optional Escrow Agreement (if applicable)
- 00 73 00 Supplemental Provisions to Part 1 of the Standard Specifications for Public Works Construction "Greenbook," latest edition and including all errata
- Technical Specifications for the Project
- All Addenda
- Plans and Drawings
- Permits
- 00 74 00 Supplemental Provisions to Parts 2-8 of the Standard Specifications for Public Works Construction "Greenbook," latest edition and including all errata
- "City of Carlsbad Engineering Standard Drawings and Specifications," as last revised
- Standard Plans for Public Works Construction, latest edition and including all errata
- Applicable Local Agency Standards and Specifications, as last revised
- Approved and fully executed change orders
- Any other documents contained in or incorporated by reference into the Contract Documents

The Contractor shall complete the Work in strict accordance with the Contract Documents. The requirements of the various sections or documents comprising the Contract Documents are intended to be complementary. Work required by 1 of the Contract Documents and not by others shall be done as if required by all. This Contract shall supersede any prior agreement of the parties.



**6. PROVISIONS REQUIRED BY LAW AND CONTRACTOR COMPLIANCE.**

Every provision of law required to be included in these Contract Documents shall be deemed to be included in these Contract Documents. The Contractor shall comply with all requirements of applicable federal, state and local laws, rules and regulations, including, but not limited to, the provisions of the Labor Code and Public Contract Code which are applicable to the Work.

**7. INDEMNIFICATION.**

Contractor shall provide indemnification and defense as set forth in the 00 73 00 Agency Supplemental General Provisions.

**8. PREVAILING WAGES.**

Contractor shall be required to pay the prevailing rate of wages in accordance with the Labor Code which such rates may be obtained online at <http://www.dir.ca.gov> and which must be posted at the job site.

[signatures on the following page]

**NOTARIAL ACKNOWLEDGMENT OF EXECUTION BY ALL SIGNATORIES MUST BE ATTACHED**

(CORPORATE SEAL)  
CONTRACTOR

City of Carlsbad

By:

By:

\_\_\_\_\_  
(sign here)

\_\_\_\_\_  
KEITH BLACKBURN, Mayor

\_\_\_\_\_  
(print name/title)

ATTEST:

By:

\_\_\_\_\_  
(sign here)

\_\_\_\_\_  
SHERRY FREISINGER, City Clerk

\_\_\_\_\_  
(print name/title)

If required by the Agency, proper notarial acknowledgment of execution by contractor must be attached. If a corporation, the Contract must be signed by 1 corporate officer from each of the following 2 groups.

**Group A**

Chairman,  
President, **or**  
Vice-President

**Group B**

Secretary,  
Assistant Secretary,  
CFO **or** Assistant Treasurer

**Otherwise**, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering the officer(s) signing to bind the corporation.

APPROVED AS TO FORM:

CINDIE K. McMAHON, City Attorney

BY: \_\_\_\_\_  
Assistant City Attorney

**END OF SECTION**



00 61 10 LABOR AND MATERIALS BOND

KNOW ALL PERSONS BY THESE PRESENTS THAT:

WHEREAS, the City of Carlsbad ("Agency") has awarded to \_\_\_\_\_ ("Principal,") a Contract for the Work described as follows:

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**  
**CONTRACT NO.: 6094**  
**BID NO.: PWS24-2373TRAN**

in strict conformity with the drawings and specifications, and other Contract Documents now on file in the Office of the City Clerk of the City of Carlsbad and all of which are incorporated by this reference; and

WHEREAS, Principal is required to furnish a bond in connection with the Contract providing that if Principal or any of its Subcontractors fail to pay (1) for any materials, provisions, provender, equipment, or other supplies used in, upon, for or about the performance of the Work contracted to be done, (2) for any Work or labor of any kind performed under the Contract, (3) for amounts due under the Unemployment Insurance Code for any Work or labor of any kind performed under the Contract, or (4) for any amounts required to be deducted, withheld, and paid over to the Employment Development Department under Unemployment Insurance Code Section 13020 or to the Franchise Tax Board under Revenue and Taxation Code Section 18663 from the wages of employees of Principal and its Subcontractors with respect to the Work or labor, the Surety on this bond will pay for the same to the extent set forth below.

NOW THEREFORE, we, Principal and \_\_\_\_\_, as Surety, are held and firmly bound unto the Agency in the penal sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_), for the payment of which sum being an amount equal to 100% of the total amount payable under the terms of the Contract by the Agency, and for which payment well and truly to be made we bind ourselves, our heirs, executors and administrators, successors, or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if Principal, or its Subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in Civil Code Section 9100; fail to pay for any materials, provisions, provender, equipment, or other supplies, used in, upon, for or about the performance of the Work contracted to be done; fail to pay for any Work or labor of any kind performed under the Contract; fail to pay amounts due under the Unemployment Insurance Code for any Work or labor of any kind performed under the Contract; or fail to pay for any amounts required to be deducted, withheld, and paid over to the Employment Development Department or Franchise Tax Board from the wages of employees of Principal or its Subcontractors pursuant to Unemployment Insurance Code Section 13020 or Revenue and Taxation Code Section 18663, with respect to the Work or labor, then the Surety

will pay for the same, in an amount not exceeding the penal sum specified above, and also, in case suit is brought upon this bond, all litigation expenses incurred by the Agency in the suit, including reasonable attorneys' fees, court costs, expert witness fees and investigation expenses to be fixed by the court consistent with Civil Code Section 9554.

This bond shall inure to the benefit of any of the persons named in Civil Code Section 9100 so as to give a right of action to such persons or their assigns in any suit brought upon this bond. The Surety stipulates and agrees that this bond shall not be exonerated or released from the obligation of this bond by:

1. Any change, extension of time for performance, addition, alteration or modification in, to, or of any Contract, Plans, Specifications, or agreement pertaining or relating to any scheme or Work of improvement described above, or the furnishing of labor, materials, or equipment pertaining or relating to any scheme or Work of improvement described above.
2. Any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or Work of improvement described above.
3. Any rescission or attempted rescission or attempted rescission of the Contract, agreement or bond.
4. Any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such Contract or agreement or under the bond.
5. Any fraud practiced by any person other than the claimant seeking to recover on the bond.

The Surety also stipulates and agrees that this bond shall be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit this bond has been given by reason of any breach of contract between the Agency and Principal or on the part of any obligee named in this bond. Finally, the Surety waives notice of any such change, extension of time, addition, alteration or modification mentioned in this bond, including but not limited to the provisions of Civil Code Sections 2819 and 2845.

If Principal is an individual, it is agreed that the death of any such Principal shall not exonerate the Surety from its obligations under this bond.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]



Executed by PRINCIPAL this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Executed by SURETY this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

PRINCIPAL:

SURETY:

\_\_\_\_\_  
(name of Contractor)

\_\_\_\_\_  
(name of Surety)

By: \_\_\_\_\_  
(sign here)

\_\_\_\_\_  
(address of Surety)

\_\_\_\_\_  
(print name here)

\_\_\_\_\_  
(telephone number of Surety)

\_\_\_\_\_  
(title and organization of signatory)

By: \_\_\_\_\_  
(signature of Attorney-in-Fact)

\_\_\_\_\_  
(printed name of Attorney-in-Fact)  
(attach corporate resolution showing current power of attorney)

(Proper notarial acknowledgment of execution by CONTRACTOR and SURETY must be attached.)

(President or vice-president and secretary or assistant secretary must sign for corporations. If only 1 officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering that officer to bind the corporation.)

APPROVED AS TO FORM:  
CINDIE K. McMAHON, City Attorney

BY: \_\_\_\_\_  
Assistant City Attorney

**END OF SECTION**

00 61 20 FAITHFUL PERFORMANCE AND WARRANTY BOND

KNOW ALL PERSONS BY THESE PRESENTS THAT:

WHEREAS, the City of Carlsbad ("Agency") has awarded to \_\_\_\_\_ ("Principal,") a Contract for the Work described as follows:

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**  
**CONTRACT NO.: 6094**  
**BID NO.: PWS24-2373TRAN**

in strict conformity with the drawings and specifications, and other Contract Documents now on file in the Office of the City Clerk of the City of Carlsbad and all of which are incorporated by this reference; and

WHEREAS, the Work to be performed by the Principal is more particularly set forth in the Contract Documents for the Project dated \_\_\_\_\_, ("Contract Documents"), the terms and conditions of which are incorporated by reference; and

WHEREAS, the Principal is required by the Contract Documents to perform the terms of them and to furnish a bond for the faithful performance and warranty of the Contract Documents.

NOW THEREFORE, we, Principal and \_\_\_\_\_, as Surety, are held and firmly bound unto the Agency in the penal sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_), for the payment of which sum being an amount equal to 100% of the total amount payable under the terms of the Contract by the Agency, and for which payment well and truly to be made we bind ourselves, our heirs, executors and administrators, successors, or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if Principal, its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract Documents and any alteration of the Contract Documents made as provided in the Contract Documents, on its part, to be kept and performed at the time and in the manner specified in the Contract Documents, and in all respects according to their true intent and meaning; and shall indemnify and save harmless the Agency, its Board, members of the Board, officers, directors, managers, employees, agents, and authorized volunteers, as stipulated in the Contract Documents, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a part of the obligation secured by this bond and in addition to the face amount specified in this bond, there shall be included costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by Agency in enforcing such obligation, all to be taxed as costs and included in any judgment rendered.



As a condition precedent to the satisfactory completion of the Work unless otherwise provided for in the Contract Documents, the above obligation shall hold good for a period of 1 year after the acceptance of the Work by the Agency. During this 1-year period, if Contractor fails to make full, complete, and satisfactory repair and replacements and totally protect the Agency from loss or damage resulting from or caused by defective materials or faulty workmanship in connection with Contractor's Work on the Project, the obligations of Surety under this bond shall continue so long as any obligation of Principal remains to the Agency. Nothing in this bond shall limit the Agency's rights or the Principal's or Surety's obligations under the Contract, law or equity, including, but not limited to, Code of Civil Procedure Section 337.15.

Whenever Principal shall be, and is declared by the Agency to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly, at the Agency's option:

- i. Take over and complete the Project in accordance with all terms and conditions in the Contract Documents;
- ii. Obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a contract between such bidder, the Surety and the Agency, and make available as Work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the Contract Price, including other costs and damages for which Surety may be liable. The term "balance of the Contract Price" as used in this paragraph shall mean the total amount payable to Principal by the Agency under the Contract and any modification to the Contract, less any amount previously paid by the Agency to the Principal and any other set offs pursuant to the Contract Documents.  
Or
- iii. Permit the Agency to complete the Project in any manner consistent with Applicable Law and make available as Work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the Contract Price, including other costs and damages for which Surety may be liable. The term "balance of the Contract Price" as used in this paragraph shall mean the total amount payable to Principal by the Agency under the Contract and any modification to the Contract, less any amount previously paid by the Agency to the Principal and any other set offs pursuant to the Contract Documents.

Surety expressly agrees that the Agency may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal.

Surety shall not utilize Principal in completing the Project, nor shall Surety accept a bid from Principal for completion of the Project, if the Agency, when declaring the Principal in default, notifies Surety of the Agency's objection to Principal's further participation in the completion of the Project.

The Surety, for value received, stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project to be performed under the Contract Documents shall in any way affect Surety's obligations on this bond, and Surety waives notice of any such change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project.

If Principal is an individual, it is agreed that the death of any such Principal shall not exonerate the Surety from its obligations under this bond.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]



Executed by PRINCIPAL this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Executed by SURETY this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

PRINCIPAL:

SURETY:

\_\_\_\_\_  
(name of Contractor)

\_\_\_\_\_  
(name of Surety)

By: \_\_\_\_\_  
(sign here)

\_\_\_\_\_  
(address of Surety)

\_\_\_\_\_  
(print name here)

\_\_\_\_\_  
(telephone number of Surety)

\_\_\_\_\_  
(title and organization of signatory)

By: \_\_\_\_\_  
(signature of Attorney-in-Fact)

\_\_\_\_\_  
(printed name of Attorney-in-Fact)  
(attach corporate resolution showing current power of attorney)

(Proper notarial acknowledgment of execution by CONTRACTOR and SURETY must be attached.)

(President or vice-president and secretary or assistant secretary must sign for corporations. If only 1 officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering that officer to bind the corporation.)

APPROVED AS TO FORM:  
CINDIE K. McMAHON, City Attorney

BY: \_\_\_\_\_  
Assistant City Attorney

**END OF SECTION**

## 00 61 30 OPTIONAL ESCROW AGREEMENT

**NAME OF PROJECT: El Camino Real Widening From Sunny Creek Road to Jackspar Drive**

**CONTRACT NO.: 6094**

**BID NO.: PWS24-2373TRAN**

**NAME OF BIDDER:** \_\_\_\_\_

This Escrow Agreement is made and entered into by and between the 1200 Carlsbad Village Drive, Carlsbad, California, 92008 ("Agency"), \_\_\_\_\_, whose address is \_\_\_\_\_, ("Contractor") and \_\_\_\_\_, whose address is \_\_\_\_\_ ("Escrow Agent").

Agency, Contractor and Escrow Agent agree as follows:

1. Pursuant Public Contract Code Section 22300, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Agency pursuant to the construction contract entered into between Agency and Contractor for **El Camino Real Widening From Sunny Creek Road to Jackspar Drive** in the amount of \_\_\_\_\_ dated \_\_\_\_\_ ("Contract"). Alternatively, on written request of Contractor, Agency shall make payments of the retention earnings directly to Escrow Agent. When the Contractor deposits the securities as a substitute for Contract earnings, Escrow Agent shall notify Agency within 10 Calendar Days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract. Securities shall be held in Agency's name and shall designate Contractor as the beneficial owner.
2. Agency shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that Escrow Agent holds securities in the form and amount specified above.
3. When Agency makes payment of retentions earned directly to Escrow Agent, Escrow Agent shall hold them for the benefit of Contractor until the time that the escrow created under this Escrow Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when Agency pays Escrow Agent directly.
4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of Agency. These expenses and payment terms shall be determined by Agency, Contractor, and Escrow Agent.
5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to Agency.
6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from



Agency to Escrow Agent that Agency consents to the withdrawal of the amount sought to be withdrawn by Contractor.

7. Agency shall have a right to draw upon the securities in the event of default by the Contractor. Upon 7 Calendar Days' written notice to Escrow Agent from Agency of a default, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by Agency.
8. Upon receipt of written notification from the Agency certifying that the Work required by the Contract is final and complete and that Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.
9. Escrow Agent shall rely on the written notifications from Agency and Contractor pursuant to Sections (5) to (8), inclusive, of this Escrow Agreement and Agency and Contractor shall hold Escrow Agent harmless from Escrow Agent's release, conversion and disbursement of the securities and interest as set forth above.
10. The names of the persons who are authorized to give written notices or to receive written notice on behalf of Agency and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

For Agency (Finance Director) Title \_\_\_\_\_  
Name \_\_\_\_\_  
Signature \_\_\_\_\_  
Address \_\_\_\_\_

For Contractor Title \_\_\_\_\_  
Name \_\_\_\_\_  
Signature \_\_\_\_\_  
Address \_\_\_\_\_

For Escrow Agent Title \_\_\_\_\_  
Name \_\_\_\_\_  
Signature \_\_\_\_\_  
Address \_\_\_\_\_

At the time the Escrow Account is opened, Agency and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Escrow Agreement.

IN WITNESS WHEREOF, the parties have executed this Escrow Agreement by their proper officers on the date first set forth above.

For Agency      Title \_\_\_\_\_  
Name \_\_\_\_\_  
Signature \_\_\_\_\_  
Address \_\_\_\_\_

For Contractor      Title \_\_\_\_\_  
Name \_\_\_\_\_  
Signature \_\_\_\_\_  
Address \_\_\_\_\_

For Escrow Agent      Title \_\_\_\_\_  
Name \_\_\_\_\_  
Signature \_\_\_\_\_  
Address \_\_\_\_\_

APPROVED AS TO FORM:  
CINDIE K. McMAHON, City Attorney

BY: \_\_\_\_\_  
Assistant City Attorney

**END OF SECTION**



# SPECIAL PROVISIONS

## INTRODUCTION

The specifications contained in this 00 73 00 Agency Supplemental General Provisions take precedence over the specification language contained in the Standard Specifications for Public Works Construction, "The Greenbook," latest edition and all errata. This specification addresses the unique conditions in Carlsbad that are not addressed in The Greenbook. Therefore, if there is a conflict, these specifications shall control.

The Greenbook may be purchased at Bidder's/Contractor's local technical bookstore or directly from the publisher. These Supplemental General Provisions are available only for download from the online bidding portal with Contract Documents. The Agency does not provide hard copies.

When used in the Contract Documents, statements, or command phrases (active voice and imperative mood) refer to and are directed at the "Bidder" or "Contractor" as applicable. The specifications are written to the "Bidder" before award and the "Contractor" after award. Before award, interpret sentences written in the imperative mood as starting with "The Bidder shall." Interpret the term "you" as "the Bidder" and interpret the term "your" as "the Bidder's." After award, interpret sentences written in the imperative mood starting with "The Contractor shall." Interpret the term "you" as "the Contractor" and interpret the term "your" as "the Contractor's."

## PART 1 GENERAL PROVISIONS

### SECTION 1 – GENERAL

#### 1-1 GENERAL.

ADD the following:

1. The word "provide" shall mean "furnish and install," unless otherwise stated.
2. In reference to Drawings, where words "shown," "indicated," "detailed," "noted," "scheduled," or words of similar import are used, it shall be understood that reference is made to the Plans accompanying these provisions, unless stated otherwise.
3. Where the words "equal," "approved equal," "equivalent," and words of similar import are used, it shall be understood such words are followed by the expression "in the opinion of the Engineer," unless otherwise stated.
4. The word "perform" shall be understood to mean that the Contractor, at its expense, shall "perform all operations and furnish labor, tools and equipment," and further, "furnish and install materials that are indicated, specified or required" shall be understood to mean that the Contractor, at its expense, shall "furnish and install the Work, complete in place and ready to use, including furnishing of necessary labor, materials, tools, equipment, and transportation."

5. Where words “directed,” “designated,” “selected,” or words of similar import are used, it shall be understood that the direction, designation, or selection of the Engineer is intended, unless stated otherwise. The word “required” and words of similar import shall be understood to mean “as required to properly complete the Work as required and as approved by the Engineer,” unless stated otherwise.

Where the words “approved,” “approval,” “acceptance,” or words of similar import are used, it shall be understood that the approval, acceptance, or similar import of the Engineer is intended.

## 1-2 TERMS AND DEFINITIONS.

Where applicable ADD/REPLACE the following:

**Agency** - The City of Carlsbad or the Carlsbad Municipal Water District, the owner of the Project.

**Agency Approval** - Except where stated in this Contract to the contrary, the phrases “Agency approval,” and “Agency’s written approval” or such similar phrases shall mean approval by the City Manager for the City of Carlsbad or the Executive Manager for the Carlsbad Municipal Water District, which approval shall not be unreasonably withheld.

**Agency Forces** – City of Carlsbad or Carlsbad Municipal Water District employees who perform construction work.

**Agency Supplement** - 00 73 00 Agency Supplemental General Provisions; and 00 74 00 Agency Supplemental Technical Provisions.

**Allowance (AL)** - Payment under Allowance Bid items, denoted as “AL,” shall be based on the actual expenditures and for pre-authorized items of the Work in accordance with the Contract Documents. The unused portions of the Allowances shall revert to the Agency upon acceptance of the Project or Work.

**Apparent Low Bidder** - The Bidder whose Bid having been publicly opened, initially meets the material requirements of the Bid Documents and whose Bid price is the lowest received.

**Applicable Laws** - Laws, statutes, ordinances, rules, orders, and regulations of governmental authorities and courts having jurisdiction over the Project.

**As-Builts** - The CADD drawings prepared from the approved Red-lines for record keeping purposes.

**Award of Contract (Award)** - The date on which the Board or designee executes the Contract.

**Bid** - Any proposal submitted to the Agency in competitive bidding for the construction, alteration, repair, or improvement of any structure, building, road or other improvement of any kind.



**Board** – The officer or body constituting the awarding authority of the Agency, which is the City Council for the City of Carlsbad or the Board of Directors for the Carlsbad Municipal Water District.

**Board of Directors for the Carlsbad Municipal Water District** – The legislative body that governs the Carlsbad Municipal Water District and has the authority to pass ordinances and appropriate funds.

**Business Day** - See Working Day.

**Calendar Day** – Every day on the calendar, including weekends and holidays.

**City** - The term “City” or “the City” means, City of Carlsbad. See also Agency.

**City Council** - The legislative body that governs the City of Carlsbad and has the authority to pass ordinances and appropriate funds.

**City Engineer** - The term “City Engineer” is defined as the Transportation Director, or designee, and is the person authorized to perform the functions of the City Engineer as defined in Government Code Section 66416.5. The City Engineer is the City's "duly authorized officer" for the purposes of Public Contract Code Sections 4107 and 4107.5.

**City Manager** – The appointed official who directs the administration of the City of Carlsbad.

**Claim** – A separate demand by the Contractor sent by registered mail or certified mail with return receipt requested that seeks an adjustment in the Contract Price, Contract Time, or other relief associated with a payment dispute arising under or relating to the Contract, including a breach of any Contract provision. A voucher, invoice, or other routine request for payment is not a Claim.

**Construction Documents** - Plans and details, including Plans showing installation of major systems, equipment, fixed furnishings and graphics, the technical specifications and all other technical drawings, schedules, diagrams and specifications, accepted Shop Drawings, Working Drawings, and submittals that are necessary to set forth in detail the requirements for the Project.

**Construction Manager** – The Project Inspector’s immediate supervisor and the Engineer’s designated representative for the first level of appeal for informal dispute resolution.

**Construction Work** - The portion of the Work to construct the Project as set forth in the Contract Documents in conformance with 2-1, “WORK TO BE DONE”.

**Contract** – The written agreement between the Agency and the Contractor covering the Work.

**Contract Documents** - Contract Documents include the following: The signed Contract, Addenda, Notice Inviting Bids, funding agency provisions, Bid including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award when attached as an exhibit to the Contract, Bonds, Permits, CEQA documents, Standard Specifications (the “Greenbook”), Agency Supplement, Plans, Standard Plans, Construction Documents, Reference Specifications, and Change Orders. Contract Documents, when applicable, shall also include Site and Coastal development permits, NEPA documents, re-vegetation plans, biological letters or technical reports, habitat mitigation plans, storm water documents, and local, state, and federal resource agency permits.

**Contract Time** - The number of Working Days to complete the Work as specified in the Contract Documents.

**Contractor** – The individual, partnership, corporation, joint venture, or other legal entity having a Contract with the Agency to perform the Work. In the case of Work being done under permit issued by the Agency, the permittee shall be constructed to be the Contractor. The term “prime contractor” shall mean Contractor.

**Critical Path** – In the Construction Schedule, the sequence of activities that represents the longest path through the Project network of activities and the shortest possible Project duration.

**Critical Path Method** – Network-based planning technique using activity durations and relationships between activities to calculate a schedule for the entire project.

**Days** – Days shall mean consecutive calendar days unless otherwise specified in this Contract.

**Defective Work** - Work that does not conform to the Contract Documents.

**Delay Factor** - The Delay Factor may be the basis for compensation for idle equipment time on an excusable delay. The factor has been calculated to include the ownership costs without including operating costs. The Delay Factor recovers all the Contractor’s non-operating costs in an 8-hour day. If payment is made for equipment on an excusable delay, it is limited to 8 hours per day or 40 hours per week maximum.

**Deputy City Engineer** – The Engineering Manager of the Construction Management & Inspection Division and the Construction Manager’s immediate supervisor and the Engineer’s designated representative for the second level of appeal for informal dispute resolution.

**Dispute Board** – Persons designated by the City Manager of the City of Carlsbad or Executive Manager of the Carlsbad Municipal Water District, to hear and advise the City Manager or Executive Manager on claims submitted by the Contractor. The City Manager for the City of Carlsbad or the Executive Manager for the Carlsbad Municipal Water District is the last appeal level for informal dispute resolution.



**Drawings** - See Plans.

**D-size Sheet** - “D” size paper for engineering design applications refers to 22” x 34” paper.

**Engineer** - The Deputy City Manager, Public Works of the City of Carlsbad acting either directly or through designated representatives and the third level of appeal for informal dispute resolution.

**Engineer of Record/Design Engineer** – A registered Professional Engineer licensed in the State of California who is qualified to act as an agent of a Project Owner or to prepare Plans for facilities to be accepted by the City of Carlsbad or the Carlsbad Municipal Water District. The term includes persons licensed in the State of California as Civil Engineers or Structural Engineers, as well as other licensed professionals like Architects and Landscape Architects.

**Executive Manager** – The appointed official who directs the administration of the Carlsbad Municipal Water District.

**Field Book** - The Agency field maps showing sewer and water facilities.

**Field Order** - A Field Order is a written agreement by the Engineer to compensate the Contractor for work items in accordance with 2-8, “EXTRA WORK” or 2-9, “CHANGED CONDITIONS.” A Field Order does not change the Contract Price or Contract Time or the intent of the Contract. The unused portions of the Field Orders shall revert to the Agency upon acceptance of the Work.

**Final Environmental Document** - The CEQA and/or NEPA document issued for the Project, such as certified environmental impact reports, mitigated negative declarations (MNDs), negative declarations, or exemptions.

**Final Payment** - The last payment for the Contract made to the Contractor, excluding Retention.

**Float** – The number of days by which an activity in the Construction Schedule may be delayed from either its earliest start date or earliest completion date without extending the Contract Time (total float). Total float belongs to the Project and to any Party to accommodate changes in the Work or to mitigate the effect of events which may delay completion.

**Holiday** - Holidays observed by the Agency are listed below:

<b>Holiday</b>	<b>Observed On</b>
New Year’s Day	January 1
Martin Luther King Day	3 <sup>rd</sup> Monday in January
Presidents’ Day	3 <sup>rd</sup> Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	1 <sup>st</sup> Monday in September

<b>Holiday</b>	<b>Observed On</b>
Indigenous Peoples' Day	2 <sup>nd</sup> Monday in October
Veteran's Day	November 11
Thanksgiving Day	4 <sup>th</sup> Thursday/Friday in November
Christmas Day	December 25

If any Holiday listed falls on a Saturday, the Saturday and the preceding Friday are both legal Holidays. If the Holiday falls on a Sunday, both Sunday and the following Monday shall be legal Holidays. **Unless specified otherwise in the Contract Documents or authorized by the Engineer**, do not work on Holidays.

**Limited Notice to Proceed (LNTP)** - A written notice given from the Agency that authorizes the Contractor to start a limited amount of work that, as described in the notice, is not Construction Work.

**Minor Bid Item** – a single contract item constituting less than 10 percent (10%) of the original Contract Price bid.

**Night Work** - See Working Night.

**Normal Working Hours** - Unless specified otherwise, Normal Working Hours core periods shall be 8:00 AM to 4:00 PM, Monday through Friday, inclusive. Saturdays, Sundays, and Agency Holidays are excluded. For Traffic Control Permits, Normal Working Hours are defined as 8:30 AM to 3:30 PM, unless specified otherwise.

**Notice of Completion (NOC)** - A document recorded with the County of San Diego to signify that the Work has been completed and accepted by the Agency.

**Party or Parties** - The Agency, the Contractor, or both, their respective permitted successors or assigns, and any other future signatories to the Contract.

**Plans** – The drawings, profiles, cross sections, Standard Plans, working drawings, and shop drawings, or reproductions thereof, approved by the City Engineer, which show the location, character, dimensions or details of the Work.

**Prime Contractor** - See Contractor.

**Project Inspector** – the Engineer's designated representative for inspection, Contract administration and the first level for informal dispute resolution.

**Project Site (Site)** - Areas where the Work is performed pursuant to the Contract.



**Punchlist** - A list of items of Work or corrections generated after a Walk-through that is conducted when the Contractor considers that the Work and Services are complete.

**Quality Control Standards and Procedures** - The standards and procedures that are stated in a written manual that can be furnished to the Engineer upon request. The standards and procedures are followed by the Supplier in the production of materials supplied for the Work Site.

**Red-lines** - Plans with annotations of changes made during construction to reflect the actual improvements or facilities built during construction whether concealed or visible.

**Retention** - The amount withheld from the money due to the Contractor in accordance with 7-3.2, "PARTIAL AND FINAL PAYMENT".

**Samples** - Physical examples of the materials, equipment, or workmanship specified or required and which conform with the standards and specifications in the Contract Documents and by which the Work shall be evaluated.

**Schedule** - A Critical Path Method (CPM) schedule of construction activities and their durations to be performed during the Contract Time and prepared by the Contractor in accordance with 6-1, "CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK", and accepted by the Engineer.

**Scope of Work (SOW)** - Labor, materials, equipment, facilities, and services required to be performed or provided by the Contractor to complete the entire Project or the various separately identifiable parts of the Project pursuant to the provisions of the Contract Documents.

**Services** - Work performed in connection with the layout, construction, testing, inspection, and commissioning of the Work or administration of the Contract and which may include professional services such as engineering, surveying, construction management and legal services that are required in accordance with the Contract Documents. Services are incidental to the Work.

**Separate Contractors** - Those individuals or entities that have entered into arrangements with the Agency for the provision of labor, materials, or other services in connection with the Project who are not under contract with the Contractor.

**Signal Pre-Check** - The procedure that the City uses to evaluate traffic signal systems prior to Signal Turn-On and generating a Punchlist.

**Signal Turn-On** - The day the City activates new traffic signals.

**SMARTS** - Stormwater Multiple Application and Report Tracking System (SMARTS) Resources provides a platform where dischargers, regulators, and the public can enter, manage, and view storm water data including permit registration documents, compliance, and monitoring data associated with California's Storm Water General Permits.

**Supplemental Provisions** – See Agency Supplement.

**Tonne** – Also referred to as “metric ton.” Represents a unit of measure in the International System of Units equal to 1,000 kilograms.

**Walk-through** - The procedure the Agency uses to evaluate the status of the Project and to generate a Punchlist prior to acceptance of the Work.

**Work** – All labor, materials, equipment, tools, and services and other requirements of the Contract Documents as modified by Change Order, whether completed or partially completed, provided or to be provided by Contractor to fulfill Contractor’s obligations. The Work may constitute the whole or a part of the Project.

**Working Day** - Any day within the period between the start of the Contract time as defined in Section 6-1 and the date provided for completion, or upon field acceptance by the Engineer for all work provided for in the Contract, whichever occurs first, other than:

- Saturday;
- Sunday;
- any day designated as a holiday by the Agency;
- any other day designated as a holiday in a Master Labor Agreement entered into by the Contractor or on behalf of the Contractor as an eligible member of a contractor association;
- any day the Contractor is prevented from working at the beginning of the workday for cause as defined in Section 6-6.1; or
- any day the Contractor is prevented from working during the first 5 hours with at least 60 percent of the normal work force for cause as defined in Section 6-6.1.

**Working Night (Night Work)** - A period of nighttime work, allowed only on Sunday through Thursday, excluding Holidays.

**Work Site** - See Project Site (Site).

## 1-3 ABBREVIATIONS.

### 1-3.2 Common Usage.

ADD the following:

**AML**            Approved Material List



<b>CADD</b>	Computer Aided Design and Drafting
<b>CA MUTCD</b>	California Manual on Uniform Traffic Control Devices
<b>CCT</b>	Correlated Color Temperature
<b>CEQA</b>	California Environmental Quality Act.
<b>CFR</b>	Code of Federal Regulations
<b>CGP</b>	Construction General Permit
<b>CIPM</b>	Cured-In-Place-Manhole
<b>CL</b>	Centerline
<b>CMS</b>	Content Management System Database
<b>CNC</b>	Computer Numerical Control
<b>CRI</b>	Color Rendering Index
<b>CSA</b>	Canadian Standards Association
<b>DBE</b>	Disadvantaged Business Enterprise
<b>DCE</b>	Data Computer Equipment
<b>DG</b>	Decomposed Granite
<b>DVBE</b>	Disabled Veteran Business Enterprise
<b>DWT</b>	Detectable Warning Tiles
<b>EOW</b>	Engineer of Work
<b>ESL</b>	Environmentally Sensitive Lands
<b>ESO</b>	Electrical Service Orders
<b>FRP</b>	Fiberglass Reinforced Plastic
<b>GFE</b>	Good Faith Effort
<b>GMT</b>	Greenwich Mean Time
<b>GPS</b>	Global Positioning System
<b>IDA</b>	International Dark Sky Association
<b>IP</b>	Ingress Protection
<b>LCD</b>	Liquid Crystal Display
<b>LD</b>	Laser Diode
<b>LER</b>	Luminaire Efficiency Rating
<b>MBE</b>	Minority Business Enterprise
<b>MDFT</b>	Minimum Dry Film Thickness
<b>MHPA</b>	Multiple Habitat Planning Area
<b>MH</b>	Manhole
<b>MIL</b>	Military
<b>MJ</b>	Mechanical Joint
<b>M&amp;M</b>	Maintenance and Monitoring
<b>MMC</b>	Mitigation and Monitoring Coordination
<b>MOV</b>	Metal Oxide Varistor
<b>NA</b>	Numerical Aperture
<b>NC</b>	Not Connected, Normally Closed
<b>NEPA</b>	National Environmental Policy Act of 1969
<b>NEXT</b>	Near End Crosstalk
<b>NCHRP</b>	National Cooperative Highway Research Program
<b>NOC</b>	Notice of Completion

<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>NTP</b>	Notice to Proceed
<b>OC</b>	On Center
<b>ODP</b>	Open Drip Proof
<b>OFNR</b>	Optical Fiber Nonconductive Riser
<b>OTDR</b>	Optical Time Domain Reflectometer
<b>PB</b>	Pull Box
<b>PCMS</b>	Portable Changeable Message Signs
<b>PCU</b>	Photoelectric Control Unit
<b>PEP</b>	Plant Establishment Period
<b>PIC</b>	Polyethylene Insulated Cable
<b>PL</b>	Property Line
<b>RFP</b>	Request for Proposal
<b>RFI</b>	Request for Information
<b>RPMS</b>	Rubber Polymer Modified Slurry
<b>SIC</b>	Standard Industry Classification
<b>SMS</b>	Short Message Service
<b>SMTP</b>	Simple Mail Transfer Protocol
<b>SOW</b>	Statement of Work, Scope of Work
<b>SOV</b>	Schedule of Values
<b>SPDT</b>	Single Pole Double Throw
<b>SSD</b>	Surge Suppression Devices
<b>TDR</b>	Time Domain Reflectometer
<b>TEES</b>	Transportation Electrical Equipment Specifications
<b>TFFN</b>	Thermoplastic Flexible Fixture Wire Nylon Jacketed
<b>TIG</b>	Tungsten Inert Gas
<b>UF</b>	Underground Feeder
<b>UPRR</b>	Union Pacific Railroad Company
<b>VAC</b>	Volts AC
<b>VPC</b>	Vitrified Polymer Composite
<b>WBE</b>	Women Business Enterprise

### 1-3.3 Institutions.

ADD the following:

<b>AMTRACK</b>	American Track National Railroad Passenger Corp.
<b>ANSI</b>	American National Standards Institute
<b>AASHTO</b>	American Association of State Highway and Transportation Officials
<b>AISC</b>	American Institute of Steel Construction
<b>ANSI</b>	American National Standards Institute
<b>API</b>	American Petroleum Institute
<b>AREA</b>	American Railway Engineering Association
<b>ASTM</b>	American Society for Testing and Materials
<b>AWPA</b>	American Wood Preservers Association
<b>AWS</b>	American Welding Society



<b>AWWA</b>	American Water Works Association
<b>BNSF</b>	Burlington Northern Santa Fe Railway
<b>DSD</b>	Development Services Department
<b>FHWA</b>	Federal Highway Administration
<b>GRI</b>	Geosynthetic Research Institute
<b>IPCEA</b>	Insulated Power Cable Engineers Association
<b>IES</b>	Illuminating Engineering Society (Photometric Data)
<b>ISO</b>	International Organization for Standardization
<b>MTS</b>	San Diego Metropolitan Transit System
<b>NACE</b>	National Association of Corrosion Engineers
<b>NAFP</b>	National Association of Pipe Fabricators
<b>NCTD</b>	North County Transit District
<b>NEMA</b>	National Electrical Manufacturers Association
<b>NOAA</b>	National Oceanic and Atmospheric Administration (Dept. of Commerce)
<b>NFPA</b>	National Fire Protection Association
<b>PCI</b>	Prestressed Concrete Institute
<b>SANDAG</b>	San Diego Association of Governments
<b>SD&amp;AE</b>	San Diego & Arizona Eastern Railroad
<b>SDTI</b>	San Diego Trolley, Inc.
<b>UL</b>	Underwriters' Laboratories Inc.
<b>USGS</b>	United States Geological Survey
<b>UPRR</b>	Union Pacific Railroad Company

## 1-6 BIDDING AND SUBMISSION OF THE BID.

### 1-6.2 Subcontractor Listing.

ADD the following:

Each Bidder shall comply with the Chapter of the Public Contract Code including Sections 4100 through 4113. The use of Subcontractors in no way relieves the Contractor of any obligations or responsibilities under the Contract.

The following excerpts or summaries of some of the requirements of this Chapter are included below for information:

The Bidder shall set forth in the Bid, as provided in Section 4104:

“(a) The name and location of the place of business of each Subcontractor who will perform Work or Labor or render service to the prime Contractor in or about the construction of the Work or improvements, or a Subcontractor licensed by the State of California who, under Subcontract to the prime Contractor, specially fabricates and installs a portion of the Work or improvement according to detailed Drawings contained in the Plans and Specifications, in an amount in excess of one-half of 1 percent of the prime Contractor’s total Bid, or, in the case of Bids or offers for the construction of streets

or highways, including bridges, in excess of one-half of 1 percent of the prime Contractor's total Bid or ten thousand dollars (\$10,000), whichever is greater."

"(b) The portion of the Work which will be done by each such Subcontractor under this act. The prime Contractor shall list only one Subcontractor for each such portion as is defined by the prime Contractor in his Bid."

If the Contractor fails to specify a Subcontractor or specifies more than one Subcontractor for the same portion of the Work to be performed under the Contract (in excess of one-half of 1 percent of the Contractor's total Bid), the Contractor shall be qualified to perform that portion itself, and shall perform that portion itself, except as otherwise provided in the Code.

As provided in Section 4107, no Contractor whose Bid is accepted shall substitute any person as Subcontractor in place of the Subcontractor listed in the original Bid, except for causes and by procedures established in Section 4107.5. This section provides procedures to correct a clerical error in the listing of a Subcontractor.

Section 4110 provides that a Contractor violating any of the provisions of the Chapter violates the Contract and the Board may exercise the option either to cancel the Contract or assess the Contractor a penalty in an amount of not more than 10 percent of the Subcontract involved, after a public hearing.

## 1-7 AWARD AND EXECUTION OF THE CONTRACT.

### 1-7.1 General.

DELETE in its entirety and SUBSTITUTE with the following:

#### **1-7.1 Standard Contract Provisions.**

##### **1-7.1.1 Successor's Obligations.**

All grants, covenants, provisions and claims, rights, powers, privileges and abilities contained in the Contract Documents shall be read and held as made by and with, and granted to and imposed upon, the Contractor, the Agency, and the Contractor's and the Agency's respective heirs, executors, administrators, successors, and assigns.

##### **1-7.1.2 Waiver of Legal Rights.**

1. The Agency's failure to insist, in any 1 or more instances, upon the performance of any provision of the Contract, or to exercise any right therein, shall not be construed as a waiver or relinquishment of such provisions or rights.
2. Any waiver of any breach of the Contract shall not be held to be a waiver of any other or subsequent breach.
3. Any waiver the Agency issues to any provision of the Contract shall only be effective if it is agreed upon in writing by the Agency and if it is specific to the matter concerned.



### **1-7.1.3 Requests for Information (RFI).**

1. Inquiries from the Contractor seeking clarification of the requirements of the Contract Documents shall be submitted in writing through Procore to the Agency as a Request for Information (RFI). Each RFI shall be consecutively numbered and accompanied by a letter of transmittal with reference to the applicable Contract specification or Plan sheet pertaining to the inquiry. Include photos or sketches as appropriate to clearly describe the inquiry. The Contractor shall allow a minimum of 10 Working Days for review of RFIs.

### **1-7.1.4 Assignment to Awarding Body.**

1. In accordance with subdivision (b) of Public Contract Code Section 7103.5, the Contractor and the Contractor's Subcontractors shall conform to the following requirements:
  - a. In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or the Contractor's Subcontractor offer and agree to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Business and Professions Code Section 16700 *et seq.*) arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract.
  - b. This assignment shall be made and become effective at the time the awarding body tenders to the Contractor, without further acknowledgment by the Parties.

### 1-7.2 Contract Bonds.

ADD the following:

1. Before execution of the Contract, the Bidder shall file surety bonds with the Agency to be approved by the Board in the amounts and for the purposes noted below. Bonds issued by a Surety, who is authorized to issue bonds in California, and whose bonding limitation shown in the circular is enough to provide bonds in the amount required by the Contract shall be deemed approved unless specifically rejected by the Agency. Bonds from all other sureties shall be accompanied by all documents enumerated in Code of Civil Procedure Section 995.660 (a). The Bidder shall pay all bond premiums, costs, and incidentals.
2. Each bond shall incorporate, by reference, the Contract and be signed by both the Bidder and Surety and the signature of the authorized agent of the Surety shall be notarized.
3. The faithful performance/warranty bond will be reduced to 25 percent of the original amount 30 Calendar Days after recordation of the Notice of Completion and will remain in full force and effect for the 1-year warranty period and until all warranty repairs are completed to the satisfaction of the Engineer. The bond to secure payment of laborers and materials suppliers shall be released 6 months plus 30 Calendar Days after recordation of the Notice of Completion if all claims have been paid.
4. All bonds are to be placed with a Surety insurance carrier admitted and authorized to transact the business of insurance in California and whose assets exceed its liabilities in an amount equal to or in excess of the amount of the bond. The bonds are to contain the following documents:

- a. An original, or a certified copy, of the unrevoked appointment, power of attorney, bylaws, or other instrument entitling or authorizing the person who executed the bond to do so.
  - b. A certified copy of the certificate of authority of the insurer issued by the insurance commissioner.
5. If the Bid is accepted, the Agency may require a financial statement of the assets and liabilities of the Surety for the quarter calendar year preceding the date of the execution of the bond. The financial statement shall be made by an officer's certificate as defined in Corporations Code Section 173. In the case of a foreign Surety, the financial statement may be verified by the oath of the principal officer or manager residing within the United States.
  6. If the Surety on any bond furnished by the Contractor is declared bankrupt, becomes insolvent, or its right to do business is terminated in any state where any part of the Project is located, immediately notify the Engineer; and immediately substitute another bond and Surety acceptable to the Agency.
  7. The Contractor shall require the Surety to mail its standard "Bond Status" form to the Agency.

**ADD 1-7.2.1 Payment.**

1. If enumerated in the Contract Documents, the Bid item for "Bonds (Payment and Performance)" includes full compensation for actual costs of payment and performance bonds. The Contractor may submit a request for payment of actual invoiced costs up to the Bid amount, but not to exceed 2.5% of the Contract Price, no less than 10 Working Days after the award of the Contract.
2. If enumerated in the Contract Documents, if the Bid item for "Bonds (Payment and Performance)" exceeds actual invoiced costs, any such differential amount up to the Bid amount shall be paid as a part of the Final Payment.

## SECTION 2 – SCOPE OF THE WORK

**2-1 WORK TO BE DONE.**

ADD the following:

1. Where approval or acceptance by the Agency is required, only a general approval is required. However, such approval does not relieve the Contractor from the Contractor's responsibility for complying with all applicable laws, codes, and best industry practices. Contractor has its obligation to fulfill all conditions of the Contract.
2. In accordance with the provisions of California Law, the Contractor shall possess or require the Contractor's Subcontractor(s) to possess valid appropriate license(s) for the Work being performed as conveyed in the Bidding Documents.

**2-2 PERMITS.**

DELETE in its entirety and SUBSTITUTE with the following:

**2-2 PERMITS, FEES, AND NOTICES**

1. The Contractor shall obtain and pay for all business taxes, business licenses, permits, and fees required for constructing the Project and licenses and inspections necessary for the



proper execution and completion of the Work, unless specified otherwise in the Contract Documents.

- a. **Resource Agency Permits.** (None)
  - b. To the extent that there is a change in the type or cost of any of such permits, fees, licenses, or inspection occurring after Award of Contract, there shall be an equitable adjustment in the Contract Price on account of such change under the Extra Work provisions.
  - c. The Contractor shall comply with and give notices required by applicable laws. The Contractor is not entitled to damages or additional payment for delays attributable to the acquisition of permits.
  - d. The Contractor shall pay the Agency for regulatory fees, fines, or penalties imposed on the Agency arising from the Contractor's failure to complete the Work in accordance with the Contract Documents.
2. Contractor shall not begin work until all permit's incidental to the Work are obtained. This includes, and is not limited to, encroachment, right-of-way, grading and building permits necessary to perform Work for this Contract on Agency property, streets, or other rights-of-way. Permits for night work, overload, blasting, demolition, and disposal of all materials removed from the Project are also Contractor's responsibility.
  3. The Contractor shall obtain and pay for all permits for the disposal of all materials removed from the Project. The cost of the permit(s) shall be included in the price Bid for the appropriate Bid item and the Agency shall not pay additional compensation for Contractor to obtain such permits and as described in Section 01 41 26.
  4. Permits shall be maintained in valid status until acceptance of the Work by the Agency.
  5. The Contractor must submit a copy of permits, registration documents and/or notices to the Engineer in accordance with Section 3-8.

#### 2-2.1 [Intentionally Omitted]

2-2.2 **County of San Diego Air Pollution Control District (APCD).** Diesel-engine driven generators, pumps, or other equipment regulated by air pollution control authorities shall have a valid permit or registration in accordance with the California Air Resources Board (CARB) and the San Diego County Air Pollution Control District (SDAPCD) regulations prior to mobilization to the site.

The Contractor shall pay for and secure an "Authority to Construct" permit from the SDAPCD prior to construction.

#### 2-2.4 **Traffic Control Plans.**

- a. The Contractor shall prepare Project specific traffic control plans, and haul route plan and use such plans to obtain a traffic control permit from the City of Carlsbad Development Services Department.

#### 2-2.5 **Other Permits.**

The following permits are applicable to the project:

- a. CDP 2021-0044

- b. SUP 2021-0002
- c. PUP 2020-0009
- d. SUP 2022-0002
- e. HDP 2022-0008

### 2-3 RIGHT-OF-WAY.

ADD the following:

1. The Contractor shall coordinate access to private property with the property owners and the timing of accessing private property when the Agency has already obtained rights of entry. Unless otherwise provided, the Contractor shall coordinate, pay for, and assume all responsibility for acquiring using, and disposing of additional work areas and facilities temporarily required. The Contractor shall indemnify and hold the Agency harmless from all claims for damages caused by such actions. The Contractor shall protect any private and public improvements.
2. Permission for Right of Entry to the Rancho Carlsbad Owner's Association property located at 5200 El Camino Real (APN 168-050-43-00) can be found in Attachment A.

### 2-4 COOPERATION AND COLLATERAL WORK.

ADD the following:

1. The Contractor shall coordinate and cooperate with all the utility companies during the mark-out and locating of any lines owned or operated by the utility companies, and during their relocation or construction, as necessary. The Contractor may be granted a time extension if, in the opinion of the Engineer, a delay is caused by the utility company. No additional compensation will be made to the Contractor for any such delay.
2. If work to be performed by the Agency or its separate Contractors is not shown or specified in the Contract Documents, the Engineer shall notify the Contractor in writing 10 Working Days prior to the start of such work and make available Plans or Specifications for work to be performed by others that may be pertinent to Contractor's Work. If Contractor determines that the work to be performed by the Agency or its separate Contractors may interfere with or cause damage or delays to Contractor's Work, notify the Engineer in writing within 3 Working Days of the Engineer's notice. The Contractor shall diligently pursue with the Engineer resolution of potential conflicts with the work of others.
3. The Contractor shall prepare and submit to the Engineer for approval a plan and schedule to integrate the work of Contractor or its Subcontractors, Agency or the work of others. The plan shall conform to the tasks identified in the Construction Schedule and identify additional tasks as necessary and the sequencing of interrelated activities.

### 2-5 THE CONTRACTOR'S EQUIPMENT AND FACILITIES.

#### 2-5.2 Temporary Utility Services.

ADD the following:

1. The Contractor shall furnish, install, maintain, and remove all temporary utility services, such as light, power, electrical, gas, and water, at its own expense for construction and



maintenance activities until acceptance of Work. These include piping, wiring, lamps, and other equipment necessary for the Work.

2. The Contractor shall obtain a construction meter for water used for the construction, testing, disinfection and flushing of new water or sewer facilities, vegetation establishment and maintenance, site maintenance, landscaping, cleanup, and all other work requiring water. The Contractor shall contact the water agency that serves the Project Site for requirements.
3. The Contractor shall pay all costs of temporary light, power and water including hookup, service, meter, and any, and all, other charges, deposits and/or fees. The costs shall be considered incidental to the items of Work that they are associated with and no additional payment will be made for them.

#### 2-5.4 Haul Routes.

DELETE in its entirety and REPLACE with the following:

1. Haul routes shall be determined by the Contractor **and permits shall be submitted to the Agency for approval**, in accordance with Section 2-2 'Permits, Fees and Notices'.

#### 2-6 CHANGES REQUESTED BY THE CONTRACTOR

ADD the following:

1. Any plan or method of work suggested to the Contractor by the Agency, but not specified or required by the Contract or Change Order, which is adopted or followed by the Contractor in whole or in part shall be done at the Contractor's sole risk and responsibility.
2. The Contract Price is not subject to adjustment for any type of tax increases after the Award.

ADD the following:

##### 2-6.1 Cost Reduction Proposal.

1. The Contractor may submit to the Engineer in writing, proposals for modifying the Plans, Specifications, or other requirements of the Contract for the sole purpose of reducing the total cost of construction.
2. The cost reduction proposal shall not impair, in any manner, the essential functions or characteristics of the Project such as service life, economy of operation, ease of maintenance, quality, desired appearance, or design and safety standards.
3. The following information must be included in the cost reduction proposal:
  - a. A description of both the existing Contract requirements for performing the Work and the proposed changes.
  - b. An itemization of the Contract requirements that shall be changed if the proposal is adopted.
  - c. A detailed estimate of the cost of performing the Work under the existing Contract and under the proposed change.
  - d. A statement of the time within which the Engineer shall act on the cost reduction proposal.
  - e. The Contract items of Work affected by the proposed changes, including any quantity variation attributable thereto.

4. This subsection does not require the Engineer to consider any cost reduction proposal. The Agency shall not be liable to the Contractor for not approving or acting upon any cost reduction proposal the Contractor submitted nor for any delays to the Work attributable to the cost reduction proposal.
5. If a cost reduction proposal is similar to the information included in the Contract Documents or adopted by the Agency after the advertisement and prior to Award of the Contract, the Engineer will not accept such proposal and reserves the right to make such changes without compensation to the Contractor under the provisions of this subsection.
6. The Contractor shall continue to perform the Work in accordance with the requirements of the Contract until a Change Order incorporating the cost reduction proposal has been issued.
7. The Engineer is the sole judge of the acceptability of a cost reduction proposal and the estimated net savings. In determining the estimated net savings, the Agency has the right to disregard the Contract Bid prices if, in the judgment of the Engineer, such prices do not represent a fair measure of the value of the Work to be performed or to be deleted.
8. The Agency reserves the right to require the Contractor to share in the Agency's costs of investigating the Contractor's cost reduction proposal. When this is required, the Contractor shall indicate the Contractor's acceptance in writing allowing the Agency to deduct amounts payable to the Contractor.
9. If the Engineer accepts the Contractor's cost reduction proposal in whole or in part, the Engineer shall issue a Change Order to incorporate the changes in the Plans and Specifications which are necessary to permit the cost reduction proposal or such part of it as has been accepted to be put into effect. If the Engineer's approval is conditional, the Change Order shall include any conditions upon which the Engineer's approval is based.
10. The Change Order also includes the estimated net savings in the cost of performing the Work due to the accepted cost reduction proposal and provides that the Contract cost be adjusted by crediting the Agency with 50% of estimated net savings amount.
11. The Contract Time shall not be extended by the acceptance of the cost reduction proposal and the performance of the Work unless specified otherwise in the Change Order.
12. The amount specified as payable to the Contractor in the Change Order is full compensation for the cost reduction proposal and the performance of the Work.
13. The Agency expressly reserves the right to adopt a cost reduction proposal for general use on contracts administered by the Agency when it determines that the proposal is suitable for application to other contracts. When an accepted cost reduction proposal is adopted for general use, only the Contractor who first submitted such proposal shall be eligible for compensation subject to this subsection, and in that case, only for contracts awarded prior to submission of the accepted cost reduction proposal.
14. The cost reduction proposals identical or similar to previously submitted proposals shall be eligible for consideration and compensation under the provisions of this subsection if the identical or similar previously submitted proposals were not adopted for general application to other contracts administered by the Agency.
15. Subject to the provisions contained in the Contract, the Agency or any other public agency shall have the right to use all or any part of any submitted cost reduction proposal without obligation or compensation of any kind to the Contractor.



16. The Contractor shall bear all costs to revise bonds for the Project to include the cost reduction incentive proposal work.

## 2-7 CHANGES INITIATED BY THE AGENCY.

### 2-7.1 General.

ADD the following:

1. Unless expressly set forth in writing in a Change Order signed by the Agency and the Contractor, changes initiated by the Agency shall not be construed as the Agency directing the Contractor's mean-and-methods in the execution of the Work.

## 2-8 EXTRA WORK.

ADD the following:

1. New or unforeseen Work will be classified as "Extra Work" when the Engineer determines that it is not covered by Contract Unit Prices or stipulated unit prices.
2. Any request by the Contractor for Extra Work shall be in writing to the Engineer and shall include itemized estimates and in accordance with Section 7-4. The Contractor shall fully itemize the Extra Work cost estimates such as labor and payroll costs, quantities, crew composition, production rates, material costs, Subcontractor and Supplier costs, equipment costs, supplemental costs, and time impact.

## 2-9 CHANGED CONDITIONS.

ADD the following:

The Contractor shall promptly notify the Engineer of the following Work Site conditions ("Changed Conditions"), in writing, upon their discovery and before they are disturbed:

1. Subsurface or latent physical conditions differing materially from those represented in the Contract;
2. Unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character being performed; and
3. Material differing from that represented in the Contract which the Contractor believes may be hazardous waste, as defined in Health and Safety Code Section 25117, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

The Engineer will promptly investigate conditions which appear to be Changed Conditions. If the Engineer determines that conditions are Changed Conditions and they will materially affect performance time, the Contractor, upon submitting a written request, will be granted an extension of time subject to Section 6-4.2.

If the Engineer determines that the conditions do not justify an adjustment in compensation, the Contractor will be notified in writing. This notice will also advise the Contractor of its obligation to notify the Engineer in writing if the Contractor disagrees.

The Contractor's failure to give notice of Changed Conditions promptly upon their discovery and before they are disturbed shall constitute a waiver of all claims in connection with them.

1. The Contractor shall not be entitled to the payment of any additional compensation for any act, or failure to act, by the Engineer, including failure or refusal to issue a Change Order, or for the occurrence of any event or other cause, unless the Contractor shall have first given the Engineer written notice of potential claim as specified in this Section 2-9. Compliance with this section shall not be required as a prerequisite to notice provisions in Section 6-4.2(4) Extensions of Time, nor to any claim that is based on differences in measurement or errors of computation as to Contract quantities.
2. The Contractor shall provide the Agency with a written document containing a description of the particular circumstances giving rise to the potential claim, the reasons for which the Contractor believes additional compensation may be due and the nature of any and all costs involved within 20 Working Days of the date of service of the written notice of potential claim for Changed Conditions. Verbal notifications will not be accepted.
3. The potential claim shall include the following certification relative to the California False Claims Act, Government Code Sections 12650-12656.

"The undersigned certifies that the above statements are made in full awareness of the California False Claims Act, Government Code Sections 12650-12656. The undersigned further understands and agrees that this potential claim, unless resolved, must be restated as a claim in response to the Agency's proposed final estimate for it to be further considered."

By: \_\_\_\_\_ Title: \_\_\_\_\_

Date: \_\_\_\_\_

Company Name: \_\_\_\_\_

4. The Contractor's estimate of costs may be updated when actual costs are known. The Contractor shall submit proof of its actual costs to the Engineer within 20 Working Days after the affected Work is completed. Failure to do so shall be cause to deny any later-filed claim regarding a potential claim described in this Section 2-9.
5. The intent of this Section 2-9 is to have differences between the parties arising under the Contract brought to the attention of the Engineer at the earliest possible time so that such matters can be settled, if possible, or other appropriate action promptly taken.
6. The Contractor shall not be entitled to the payment of any additional compensation for any act, or failure to act, by the Engineer, including failure or refusal to issue a Change Order, or for the occurrence of any event or other cause, unless the Contractor shall have first given the Engineer written notice of potential claim as specified in this section. Compliance with this section is not a prerequisite to notice provisions in "6-4.2 Extensions of Time", nor to any claim that is based on differences in measurement or errors of computation as to Contract quantities. The Contractor's failure to give written notice of potential claim for changed



conditions to the Agency upon their discovery and before they are disturbed shall constitute a waiver of all claims in connection therewith.

## 2-10 DISPUTED WORK.

ADD the following subsections:

### 2-10.1 Potential Claims.

1. For the purposes of Section 2-10, a Potential Claim means any claim which has not yet been submitted, though which may later be submitted consistent with the requirements of this Section.
2. A Potential Claim shall conform to these specifications and may be considered after the Agency has previously denied a request by the Contractor for a Change Order seeking the demanded relief.
3. The Contractor shall submit a Potential Claim to the Engineer if a dispute occurs that arises from or relates to the Contract. The Potential Claim shall seek all relief to which the Contractor asserts the Contractor is entitled as a result of the event(s) giving rise to the dispute. The Contractor's failure to process a Potential Claim in accordance with these specifications shall constitute a waiver of all relief associated with the dispute. Potential Claims are subject to 6-10, "Right to Audit."
4. The Contractor shall continue to perform the Services and Work and shall maintain the Schedule during any dispute proceedings. The Engineer will continue to make payments for undisputed Services and Work.
5. The Agency's Potential Claims process specified in the Agency Supplement shall not relieve the Contractor of the Contractor's statutory obligations to present Claims prior to any action under the Government Code.
6. Except for those final payment items disputed in the written statement required in Section 7-3.2, all Potential Claims of any dollar amount shall be submitted in a written statement by the Contractor no later than the date of receipt of the final payment estimate. Those final payment items disputed in the written statement required in Section 7-3.2 shall be submitted no later than 30 Calendar Days after receipt of the Final Payment estimate. No Potential Claim will be considered that was not included in this written statement, nor will any Potential Claim be allowed for which written notice or protest is required under any provision of this Contract, including Sections 2-9 Changed Conditions, 2-10 Disputed Work, 4-1(22) Protection, 6-4.4 Written Notice and Report, or 6-4.2(4) Extensions of Time, unless the Contractor has complied with notice or protest requirements.
7. The Engineer will consider Contractor's filed Potential Claims, which must be detailed enough so the Engineer can determine the basis and amount of the Potential Claims. Contractor shall provide the Engineer additional information to determine the facts or contentions involved in a Potential Claim if requested by the Engineer. If additional information is needed, Contractor must provide Engineer with this information within a reasonable time of being asked for additional information. Failure to submit such information and details will be sufficient cause for denying the Claims.
8. Payment for Potential Claims shall be processed by the next payment application of their resolution for those Potential Claims approved by the Engineer. The Contractor shall proceed

with informal dispute resolution under Section 2-10, Disputed Work, for those Potential Claims remaining in dispute.

#### 2-10.1.1 Initiation of Potential Claim.

1. A Potential Claim is a written demand by the Contractor that seeks an adjustment in the Contract Price, Contract Time, or other relief associated with a dispute arising under or relating to the Contract, including a breach of any provision of the Contract. A voucher, invoice, payment application or other routine request for payment is not a Claim. A Claim shall conform to these specifications and may be considered after the City has previously denied a request from the Contractor for a Change Order seeking the demanded relief. The Contractor shall, consistent with 2-10.1.2, give the Agency written notice of Claim prior to commencing any Disputed Work. Failure to give the notice shall constitute a waiver of all Claims in connection with the Disputed Work. If the Contractor and the Agency are unable to reach agreement on Disputed Work, the Agency may direct the Contractor to proceed with the Work and such direction shall not be construed as the Agency directing the Contractor's mean-and-methods in the execution of the Work. After the Agency has rejected a Change Order request and prior to proceeding with dispute resolution pursuant to the Public Contract Code, applicable provisions of which are specified below, the Contractor shall attempt to resolve all disputes informally through the following dispute resolution chain of command:
  - A. Project Inspector
  - B. Construction Manager
  - C. Deputy City Engineer/Engineering Manager
  - D. City Engineer
  - E. City Manager or Executive Manager
2. Consistent with Section 2-10.1.2, the Contractor shall submit a complete report within 20 Working Days after completion of the Disputed Work stating its position on the Potential Claim, the contractual basis for the Potential Claim, along with all documentation supporting the costs, Contract Time, and all other evidentiary materials. At each level of Potential Claim or appeal of Potential Claim the Agency will, within 10 Working Days of receipt of the Potential Claim or appeal of Potential Claim, review the Contractor's report and respond with a position, request additional information or request that the Contractor meet and present its report. When additional information or a meeting is requested the Agency will provide its position within 10 Working Days of receipt of the additional information or Contractor's presentation of its report. The Contractor may appeal each level's position up to the City Manager or Executive Manager for Potential claims after which the Contractor may proceed under the provisions of the Public Contract Code. The Agency's failure to state a position or otherwise respond to a Potential Claim within the timeframes set forth above shall be deemed a rejection of the Potential Claim by the Agency.
3. The authority within the dispute resolution chain of command is limited to recommending a resolution to a Potential Claim to the City Manager for the City of Carlsbad or Executive Manager for the Carlsbad Municipal Water District. Actual approval of the Potential Claim is subject to the Change Order provisions in the Contract.



4. Any remaining Potential Claims not resolved by the informal dispute resolution process described above shall be resolved in accordance with Public Contract Code Section 9204, provided in Section 2-10.2 'Claims'.

**2-10.2 Claims.** Claims will be resolved in accordance with the Public Contract Code Section 9204, the relevant portion of which is included below:

(d)(1)(A) Upon receipt of a Claim pursuant to this section, the public entity to which the Claim applies shall conduct a reasonable review of the Claim and, within a period not to exceed 45 days, shall provide the Claimant a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, a public entity and a Contractor may, by mutual agreement, extend the time period provided in this subdivision.

(B) The Claimant shall furnish reasonable documentation to support the Claim.

(C) If the public entity needs approval from its governing body to provide the Claimant a written statement identifying the disputed portion and the undisputed portion of the Claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a Claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the Claimant a written statement identifying the disputed portion and the undisputed portion.

(D) Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.

(2)(A) If the Claimant disputes the public entity's written response, or if the public entity fails to respond to a Claim issued pursuant to this section within the time prescribed, the Claimant may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(B) Within 10 business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, the public entity shall provide the Claimant a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the Claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the Claimant sharing the associated costs equally. The public entity and Claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those

mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be subject to applicable procedures outside this section.

(C) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

(D) Unless otherwise agreed to by the public entity and the Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

(E) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program if mediation under this section does not resolve the parties' dispute.

(3) Failure by the public entity to respond to a Claim from a Contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the Claim being deemed rejected in its entirety. A Claim that is denied by reason of the public entity's failure to have responded to a Claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the Claim or the responsibility or qualifications of the Claimant.

(4) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.

(5) If a Subcontractor or a lower tier Subcontractor lacks legal standing to assert a Claim against a public entity because privity of Contract does not exist, the Contractor may present to the public entity a Claim on behalf of a Subcontractor or lower tier Subcontractor. A Subcontractor may request in writing, either on their own behalf or on behalf of a lower tier Subcontractor, that the Contractor present a Claim for work which was performed by the Subcontractor or by a lower tier Subcontractor on behalf of the Subcontractor. The Subcontractor requesting that the Claim be presented to the public entity shall furnish reasonable documentation to support the Claim. Within 45 days of receipt of this written request, the Contractor shall notify the Subcontractor in writing as to whether the Contractor presented the Claim to the public entity and, if the original Contractor did not present the Claim, provide the Subcontractor with a statement of the reasons for not having done so.

(e) The text of this section or a summary of it shall be set forth in the Plans or Specifications for any Public Works Project that may give rise to a Claim under this section.



(f) A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a Claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) a public entity may prescribe reasonable Change Order, Claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.

(g) This section applies to contracts entered into on or after January 1, 2017.

(h) Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

(i) This section shall remain in effect only until January 1, 2027, and as of that date is repealed, unless a later enacted statute that is enacted before January 1, 2027, deletes, or extends that date.

In addition, all Claims by Contractor for \$375,000 or less shall be resolved in accordance with the procedures in the Public Contract Code Section 20104 *et seq.*, applicable provisions of which are included below:

**20104.2** For any Claim subject to this article, the following requirements apply:

(a) The Claim shall be in writing and include the documents necessary to substantiate the Claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of Claims.

(b)(1) For Claims of less than fifty thousand dollars (\$50,000), the local agency shall respond in writing to any written Claim within 45 days of receipt of the Claim, or may request, in writing, within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim the local agency may have against the Claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the Claimant.

(3) The local agency's written response to the Claim, as further documented, shall be submitted to the Claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the Claimant in producing the additional information, whichever is greater.

(c)(1) For Claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the local agency shall respond in writing

to all written Claims within 60 days of receipt of the Claim, or may request, in writing, within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim the local agency may have against the Claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the Claimant.

(3) The local agency's written response to the Claim, as further documented, shall be submitted to the Claimant within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the Claimant in producing the additional information or requested documentation, whichever is greater.

(d) If the Claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the Claimant may so notify the local agency, in writing, either within 15 days of receipt of the local agency's response or within 15 days of the local agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the local agency shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(e) Following the meet and confer conference, if the Claim or any portion remains in dispute, the Claimant may file a Claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a Claim must be filed shall be tolled from the time the Claimant submits his or her written Claim pursuant to subdivision (a) until the time that Claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

(f) This article does not apply to tort Claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort Claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

**20104.4** The following procedures are established for all civil actions filed to resolve Claims subject to this article:

(a) Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court

or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

(b)(1) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act (Title 4 (commencing with Section 2016.010) of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

(2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.

(3) In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.

(b) The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

**20104.6** Payment on undisputed portion of Claim; interest on arbitration awards or judgments:

(a) No local agency shall fail to pay money as to any portion of a Claim which is undisputed except as otherwise provided in the Contract.

(b) In any suit filed under Section 20104.4, the local agency shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

5. Although not to be construed as proceeding under Extra Work provisions, the Contractor shall keep and furnish records of disputed Work in accordance with Section 2-10.

#### 2-10.1.2 Claim Certification Submittal.

1. If the Contractor's Claim seeks an increase in the Contract Price, the Contract Time, or both, submit with the Claim an affidavit certifying the following:



- a. The Claim is made in good faith and covers all costs and delays to which the Contractor is entitled as a result of the event(s) giving rise to the Claim.
- b. The amount Claimed accurately reflects the adjustments in the Contract Price, the Contract Time, or both to which the Contractor believes the Contractor is entitled.
- c. All supporting costs and pricing data are current, accurate, and complete to the best of the Contractor's knowledge. The Contractor shall supply a cost breakdown per item of Work.
- d. The Contractor shall ensure that the affidavit is executed by an official who has the authority to legally bind the Contractor.

ADD the following subsection:

#### 10.3 Governing Law & Forum for Litigation.

1. This Contract shall be governed by and construed in accordance with the laws of the State of California. Any lawsuits, at law or in equity, between the parties arising out of this Contract shall be filed in a court of competent jurisdiction in the County of San Diego. With respect to venue, the parties agree that this Contract is made in and will be performed in the County of San Diego. The parties waive all provisions of law providing for a change of venue in these proceedings to any other county.

## SECTION 3 – CONTROL OF THE WORK

#### 3-2 SELF-PERFORMANCE.

ADD the following:

1. If Contractor fails to satisfy the provisions requiring the Contractor to complete Work amounting to at least 50 percent of the Contract price with its own organization unless stipulated otherwise in the Contract Documents, the Agency may at its sole discretion elect to cancel the Contract or deduct an amount equal to 10 percent of the value of the Work performed in excess of 50 percent of the Contract Price by other than the Contractor's own organization. The Board shall be the sole body for determination of a violation of these provisions. In any proceedings under this section, the Contractor, or prime Contractor, shall be entitled to a public hearing before the Board and shall be notified 10 Calendar Days in advance of the time and location of the hearing. The determination of the Board shall be final.

#### 3-3 SUBCONTRACTORS.

ADD the following:

1. The Contractor shall incorporate these Specifications in the Contractor's subcontracts for the work being performed by the Contractor's Subcontractor.
2. The Contractor shall obtain or require that each Subcontractor obtains insurance policies in accordance with 5-4, "INSURANCE" which shall be kept in full force and effect for the duration of the Contract and in any attached supplemental agreements.
3. In any dispute between the Contractor and the Contractor's Subcontractors, the Agency shall not be made a party to any judicial or administrative proceeding to resolve the dispute.

4. The Contractor shall ensure that the Contractor's Subcontractors are appropriately licensed for the duration of the work that is performed under the Subcontracts in accordance with 2-1, "WORK TO BE DONE." If a Subcontractor is not properly licensed, the Contractor shall cease payment to the Subcontractor for all work performed when the Subcontractor was not properly licensed. The Contractor shall return to the Agency any payment the Contractor made to a Subcontractor for work performed when the Subcontractor was not licensed.
5. Subcontractors shall be considered employees of the Contractor, and the Contractor shall be responsible for their work.
6. Where the Contract Documents require that a particular product be installed or applied by an applicator approved by the manufacturer, ensure the Subcontractor or Supplier employed for such work is approved by the manufacturer.
7. Before the work of any Subcontractor is started, the Contractor shall submit to the Engineer for approval a written statement showing the Work to be subcontracted giving the name and business of each Subcontractor and description and value of each portion of the Work to be so subcontracted. This submittal will confirm the Subcontractor's commitments in the Bid.
8. Refer to the technical specifications for minimal qualifications, necessary work experience, certifications, and performance requirements for specific portions of the work.

#### 3-4 AUTHORITY OF THE ENGINEER.

ADD the following:

1. The Engineer shall be the single point of contact and shall be included in all communications between Contractor and any Agency representative.

#### 3-5 INSPECTION.

ADD the following:

1. Contractor shall make available to the Engineer accurate books and accounting records regarding all its activities. Contractor shall contractually require all Subcontractors to this Contract to do the same. The Engineer shall have access to the Contractor's, and any Subcontractors documents described in this Section 3-5(1) within San Diego County. The Engineer shall have the right to monitor, assess, and evaluate Contractor's and its Subcontractor's performance pursuant to this Contract. The Engineer's monitoring, assessments, and evaluations will include, but shall not be limited to, audits, inspection of premises, reports, contracts, subcontracts and interviews of Contractor's staff and the staff of all Subcontractors to this Contract. Upon reasonable advance notice, Contractor shall make available to the Engineer for examination, all of its, and all Subcontractors to this Contract, records with respect to all matters covered by this Contract. Contractor shall also permit the Engineer to audit, examine, copy and make excerpts or transcripts from such data and records, and to make audits of all invoices, materials, payrolls, records of personnel, and other data relating to all matters covered by this Contract. Any inspection described in this Section 3-5(1) shall occur as often as the Engineer deems necessary and during normal business hours. However, any such inspection shall not unreasonably interfere with Contractor's ongoing business operations. Contractor and all Subcontractors to this Contract shall maintain such data and records for as long as may be required by applicable laws and regulations.

2. The Agency may utilize consultants to assist the Engineer during construction in observing the Contractor's performance. The consultant shall be the Agency's Representative on the Site assisting the Engineer and must not be confused with a building inspector with the Agency or with a Special Inspector.
3. The Agency may utilize a Special Inspector for inspection of specialty work and materials, whose costs the Agency will pay for unless the Contractor fails inspection. If inspections or tests reveal non-compliance with the requirements of the Contract Documents, the Contractor shall pay for all corrective measures deemed necessary by the Engineer and also pay the cost of the Agency's subsequent re-inspection and re-testing.
4. Inspections required by codes or ordinances are the Contractor's responsibility.
5. The Contractor's quality control testing and inspections are the Contractor's responsibility. Contractor shall coordinate and schedule all inspections and tests. The Contractor shall give the Engineer notice of tests and inspections made by others. At least 5 Working Days of notice shall be given for offsite inspections. The Contractor shall wait until the Engineer has responded and agreed to Contractor's schedule before scheduling test or inspections.
6. The Agency shall schedule any inspections and tests as the Agency deems necessary to ensure the Work is accomplished in accordance with the requirements of the Contract Documents (other than inspections for work performed in accordance with a permit). The Contractor is responsible for the inspection of all Work performed in accordance with the Contract Documents.
7. Contractor shall provide access in accordance with Cal-OSHA Standards as necessary.
8. Contractor shall remove and replace any items of Work performed without the required permit or inspection. For required subsequent inspection, the Contractor shall remove and replace Work at the discretion of Engineer at no additional cost to the Agency. Inspection of the Work does not relieve the Contractor of full compliance with the Contract Documents.
9. Contractor shall not conceal the Work prior to inspection, testing, or approval required by the Contract Documents, the Engineer's prior written request, or by other agencies. If any item of Work is done prior to obtaining the required approvals when requested by the Engineer, Contractor shall expose the Work for inspection, testing, and/or approval. Upon successful completion of the inspection, testing, or approval, the Contractor shall proceed with the Work. The Contractor shall bear all direct and indirect costs and damages of such uncovering and re-covering and shall not be entitled to an increase in the Contract Price or the Contract Time, unless the Contractor has given the Engineer and any other affected agencies written notice of the Contractor's intention to cover the Work and the Engineer has not acted in response to such notice.
10. When specified, Contractor shall make arrangements for tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Engineer, or with the appropriate public authority. The payment for such tests, inspections, and approvals are included in the Contract Price.
11. Unless specified otherwise, the Contractor shall pay the cost of inspections and tests. If inspections or tests reveal non-compliance with the requirements of the Contract Documents, the Contractor shall bear the cost of corrective measures deemed necessary by the Engineer and the cost of the Agency's subsequent re-inspection and re-testing.



12. The Contractor shall, at no charge to the Agency, provide copies of all records in the Contractor's or Subcontractor's possession pertaining to the Work that the Engineer may request.

### 3-6 THE CONTRACTOR'S REPRESENTATIVE.

ADD the following:

1. Both the representative and alternative representative shall be the Contractor's employees and shall not be assigned to a Subcontractor unless otherwise approved by the Agency in writing.
2. The Contractor's Project team shall attend scheduled construction meetings as required by the Engineer. If any of Contractor's staff cannot attend, the Contractor shall notify the Engineer a minimum of 24 hours in advance, prior to the start of the scheduled meeting.
3. The payment for the Contractor's attendance at Project meetings is included in the Contract Price. The Engineer shall deduct costs assessed to the Contractor for not attending the meetings from the monthly progress payment via Change Order.
4. The Contractor's Representative shall possess the following minimum qualifications and experience:
  - a. At least five years of verifiable experience in a superintendent capacity for projects that are similar in scope and cost to the projects identified in the Bidder Information and Experience Form (00 43 40), and successful completion of at least two projects similar in scope to the Work of this Contract with values over \$2,000,000. The Contractor shall be responsible for submitting verifiable experience records.

### 3-7 CONTRACT DOCUMENTS.

#### 3-7.1 General.

ADD the following:

1. Specifications and Plans are divided into groups by engineering discipline for the Agency's convenience. These divisions are not for the purpose of apportioning the Work or responsibility for the Work among Subcontractors and Suppliers.
2. The Contractor shall supply any Work that may reasonably be inferred from the Specifications or Plans as being required to produce the intended result whether or not it is specifically called for, at no additional cost to the Agency.
3. If referenced documents have been discontinued or updated by the issuing organization, the replacement documents issued or otherwise identified by that organization shall be used or, if there are no replacement documents, the last version of the document before it was discontinued.
4. Scaled dimensions on Contract Documents are approximate. Before ordering materials or commencing the Work, the Contractor shall measure the Site for proper size and fit and verify dimensions and quantities by taking measurements in the field. The Contractor shall be responsible for their accuracy.
5. The Contractor shall verify any conditions affecting the cost of the Work through a reasonable examination of the Work Site prior to submitting the Bid.

6. Existing improvements visible at the Work Site, for which no specific disposition is made on the Plans, but which interfere with the completion of the Work, shall be removed, and disposed of by the Contractor.
7. The Plans, Specifications, and other Contract Documents shall govern the Work. The Contract Documents are intended to be complementary and cooperative. Anything specified in the Specifications and not shown on the Plans or shown on the Plans and not specified in the Specifications, shall be as though shown on or specified in both.
8. The Contractor shall ascertain the existence of any conditions affecting the cost of the Work through a reasonable examination of the Work Site prior to submitting the Bid.
9. Existing improvements visible at the Work Site, for which no specific disposition is made on the Plans, but which interfere with the completion of the Work, shall be removed, and disposed of by the Contractor.
10. The Contractor shall, upon discovering any error or omission in the Plans or Specifications, immediately call it to the attention of the Engineer. The Contractor shall ascertain the existence of any conditions affecting the cost of the Work through reasonable examination of the Work site prior to submitting the Bid.

### 3-7.2 Precedence of the Contract Documents.

DELETE in its entirety and REPLACE with the following:

1. If there is a conflict between any of the Contract Documents, the document highest in the order of precedence, and most recent in edition, shall control. The order of precedence, from highest to lowest, shall be as follows:
  - a. Permits (issued by jurisdictional regulatory agencies including environmental documents).
  - b. Change Orders and supplemental agreements; whichever occurs last.
  - c. Contract Addenda, whichever occurs last.
  - d. The signed written Contract.
  - e. City of Carlsbad General Provisions (00 73 00)
  - f. Technical Specifications
  - g. City of Carlsbad Supplemental Provisions (00 74 00)
  - h. Project Plans.
  - i. Standard Plans
    - i. City of Carlsbad Standard Drawings.
    - ii. Carlsbad Municipal Water District Standard Drawings.
    - iii. City of Carlsbad modifications to the San Diego Area Regional Standard Drawings.
    - iv. San Diego Standard Regional Standard Drawings.
    - v. Traffic Signal Design Guidelines and Standards.
    - vi. State of California Department of Transportation Standard Plans.
    - vii. California Manual on Uniform Traffic Control Devices (CA MUTCD).
  - j. "Greenbook" (Standard Specifications for Public Works Construction).
  - k. Reference Specifications.
  - l. Manufacturer's Installation Recommendations

2. When additional small business/minority/women-owned/veteran or other special requirements by funding sources are included in the Contract Documents, the funding source's requirements shall govern.
3. When a conflict exists between the ADA requirements of Title 24, and the Agency Supplemental Provisions, the most restrictive requirement shall be followed.

ADD the following:

### 3-7.3 Red-lines and Record Documents.

#### 3-7.3.1 General.

1. The Contractor shall, at no charge to the Agency, provide copies of all records in the Contractor's or Subcontractor's possession pertaining to the Work that the Engineer may request.
2. The Contractor shall keep the Red-lines current with entries checked by the Engineer before the Work is covered. Contractor's failure to update and deliver Red-lines information monthly to the Engineer for review and approval may result in the withholding of monthly progress payments.
3. The Contractor shall note the source identification, such as RFI numbers and Change Order numbers, as required identifying the source of the change to the Contract Documents.
4. The Contractor shall deliver the Red-lines to the Engineer upon completion of the Construction Work.
5. The Contractor shall legibly annotate a full-size set of Plans daily, in red ink, to record additions, deletions or changes to the Work and changes in location, elevation or character of the Work not otherwise shown or noted in the Contract Documents. This "redline" set of drawings shall be kept on the Job Site, shall be used only as a record set. Contractor shall immediately give written notice of any conflicts between these documents to the Engineer.
6. The draft final red line set shall be submitted to the Engineer within five (5) Calendar Days of the final walk-through meeting. The Contractor shall review the redline changes with the engineer during this meeting. The engineer will provide submittal review transmittal noting if the red line set has been accepted or requires revision. The Contractor shall revise per the requested changes and corrections noted and resubmit within ten (10) calendar days upon receipt of the submittal review transmittal.
7. As-built information shall represent field measurements, approved Shop Drawings, Working Drawings, samples, product data, and other pertinent data discovered during the performance of the Work. The Contractor shall note the source of the change such as RFI or Change Order numbers, as required. The Contractor shall clearly record additions or changes in the Work and depth of underground facilities by dimensioning from 2, known, fixed points.
8. Payment for Record Drawings and Documents shall be included in the various Bid items and no additional payment will be made therefor.



### 3-7.3.2 Asset Specific Red-lines.

1. Irrigation System Red-lines: Red-lines shall clearly record by dimension from 2 known fixed points and by depth of underground facilities all deviations, modifications, and changes in the Work. Records, deviations, modifications, and changes on the day the Work is performed shall reflect the actual Work location and shall be marked in red at the scale of the Plan sheet on which they are recorded. Red-lines shall show any changes to the Plans for the equipment locations and associated information for the following:
  - a. Potable water mainline and size
  - b. Water Meter - Size, type of water (potable or reclaimed), and water meter address.
  - c. Backflow Device - Size, available static pressure in psi, the psi and flow in gallons per minutes for which the irrigation system is designed, and device serial number.
  - d. Master Control Valve.
  - e. Flow Sensor.
  - f. Pressure Regulator Valve.
  - g. Isolation Valves.
  - h. Remote Control Valves - Size, irrigation controller, valve station number, and flow demand in gallons per minute.
  - i. Quick Coupling Valves and Size.
  - j. Electrical Meter, including meter address.
  - k. Remote Control Valve Wiring.
  - l. Communication Cables.
  - m. Pull Boxes.
  - n. Rain Shut Off Switch.
  - o. Electrical lines from electrical meter to irrigation controller, including the power disconnect switch.
  - p. Irrigation Mainline and Size.
  - q. Irrigation Lateral Line and Size.
  - r. Irrigation Sleeves and Size.
  - s. Irrigation Controller - Location, number of stations, identifying call-out.
  - t. Irrigation sprinkler heads which have been added or deleted from the approved Plans. Changes in manufacturer nozzle size shall be noted on the red-lined Drawings including operating pressure, gallons per minute, and radius of throw.
2. Re-vegetation Red-lines:
  - a. Within 4 weeks of the end of the Plant Establishment Period, as determined and accepted by the Project Biologist or Landscape Architect, furnish and submit to the Engineer 1 full scale Red-lines set showing field changes to grade, erosion control, and seeding for the re-vegetated areas.
3. Utility Red-lines: Utility Red-lines shall show any changes from the Plan for the following:
  - a. Horizontal and vertical bends
  - b. Changes in pipe material or pressure class
  - c. Isolation valves
  - d. Insulating joints

- e. Blow off valves by stationing and offsets.
  - f. Air vacuum valves by stationing and offsets.
  - g. Water and recycled water meter boxes replaced.
  - h. Water sampling stations
  - i. Cathodic test stations
  - j. Locations of all sewer laterals and cleanouts.
  - k. Items abandoned in place following dewatering operation.
4. Building Red-lines: Building Red-lines shall show any changes from the Plans for the following:
- a. Location by dimension and the depth by elevation of underground lines, valves, plugged tees, and capped ends.
  - b. By dimension or scale Plans, wiring, conduits, and pull boxes as installed.
  - c. Information necessary to maintain and service concealed items of Work.
  - d. Dimensional changes to the Drawings.
  - e. Revisions to details shown on the Drawings.
  - f. Depths of foundations below the first floor.
  - g. Locations and depths of underground utilities.
  - h. Revisions to the routing of piping and conduits.
  - i. Revisions to electrical circuitry.
  - j. Actual equipment locations.
  - k. Duct size and routing.
  - l. Locations of concealed internal utilities.
  - m. Changes made by Change Orders.
  - n. Details not shown on original Plans.
5. Traffic Signals and Street Lighting:
- a. The Contractor shall provide the Engineer with a cable route diagram indicating the actual cable route and meter marks for all intersections, directional change points in the cable routing, and all termination points. The Contractor shall record these points during cable installation, provide cable system Red-lines showing the accurate cable route to the Engineer, and record information such as the location of slack cable and its quantity in the cable route diagram.
  - b. The Contractor shall provide 3 copies of D-Sheet sized Red-lines.
6. SWPPP:
- a. Upon completion of construction, the Contractor shall submit the SWPPP and all its appendices, records, reports, maps and records of permanent BMPs to the Engineer with the Red-lines.
7. Slurry Seal and Asphalt Concrete Overlay:
- a. The Contractor shall clearly record on the forms the Agency provides in MS Excel format the actual dates and quantity of each Bid item applied to each street segment and comments regarding each segment and record reasons if no work is performed.

8. Fiber Optic and Wi-Fi Device Red-lines: Fiber Optic and Wi-Fi Device Red-lines shall clearly record by dimension from 2 known fixed points and by depth of underground facilities all deviations, modifications, and changes in the Work. Records, deviations, modifications, and changes on the day the Work is performed shall reflect the actual Work location and shall be marked in red at the scale of the Plan sheet on which they are recorded. Red-lines shall show the equipment locations and associated information for the following:
  - a. Locations and depths of underground utilities.
  - b. Revisions to the routing of piping and conduits.
  - c. Actual equipment locations.
  - d. Pull Boxes.
  - e. Electrical Meter, including meter address.
  - f. Items abandoned in place.

#### 3-7.3.3 Payment.

1. The payment for Red-lines Drawings shall be included in the Contract Price.

ADD the following:

#### 3-7.4 Measurement and Dimensions.

1. Scaled dimensions are approximate. Before ordering materials or commencing the Work, the Contractor shall measure the Site for proper size and fit and verify dimensions and quantities by taking measurements in the field. Contractor shall be responsible for their accuracy.

### 3-8 SUBMITTALS.

#### 3-8.1 General.

ADD the following:

- a. Shop Drawings and engineering data (submittals) covering all equipment and all fabricated components and building materials which will become a permanent part of the Goods and Special Services under this Contract shall be submitted to Engineer for review, as required. Submittals shall verify compliance with the Contract Documents and shall include Drawings and descriptive information in sufficient detail to show the kind, size, arrangement, and the operation of component materials and devices; the external connections, anchorages, and supports required; the performance characteristics; and dimensions needed for installation and correlation with other materials and equipment.
- b. Each submittal shall cover items from only one section of the specification unless the item consists of components from several sources. Contractor shall submit a complete initial submittal including all components. When an item consists of components from several sources, Contractor's initial submittal shall be complete including all components.
- c. All submittals, regardless of origin, shall be approved by Contractor and clearly identified with the name and number of this Contract, Contractor's name, and references to applicable specification paragraphs and Contract Drawings. Each copy of all submittals, regardless of origin, shall be stamped or affixed with an approval statement of Contractor:



1. "I hereby certify that the (equipment, material, procedure(s)) shown and marked in this submittal is that proposed to be incorporated into this Project, is in compliance with the Contract Documents, can be installed in the allocated spaces, and is submitted for approval."
  2. Or "I hereby certify that the (equipment, material, procedure(s)) contained herein meet all requirements shown or specified in the Contract Documents, except for the following deviation(s): \_\_\_\_\_."
- d. Each submittal shall indicate the intended use of the item in the Goods and Special Services. When catalog pages are submitted, applicable items shall be clearly identified and inapplicable data crossed out. The current revision, issue number, and date shall be indicated on all Drawings and other descriptive data.
  - e. Contractor shall be solely responsible for the completeness of each submittal. Contractor's stamp or affixed approval statement of a submittal, is a representation to Engineer that Contractor accepts sole responsibility for determining and verifying all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, and that Contractor has reviewed and coordinated each submittal with the requirements of the Goods and Special Services and the Contract Documents.
  - f. All deviations from the Contract Documents shall be identified as deviations on each submittal and shall be tabulated in Contractor's letter of transmittal. Such submittals shall, as pertinent to the deviation, indicate essential details of all changes proposed by Contractor (including modifications to other facilities that may be a result of the deviation) and all required piping and wiring diagrams.
  - g. Engineer will not accept submittals from anyone but Contractor. Submittals shall be consecutively numbered in direct sequence of submittal and without division by subcontracts or trades.
  - h. For electronic submittals in Procure, drawings and the necessary data shall be submitted electronically to Engineer as specified below. Submittal documents shall be in black and white unless color is required for the review of the submittal. All electronic files shall be in PDF as generated by Adobe Acrobat Professional latest version. The PDF file(s) shall be fully indexed using the Table of Contents, searchable with thumbnails generated. PDF images must be at a readable resolution. For most documents, they should be scanned or generated at 300 dots per inch (dpi). Optical Character Recognition (OCR) capture must be performed on these images so that text can be searched, selected and copied from the generated PDF file. The PDF documents shall have a bookmark created in the navigation frame for each major entry ("Section" or "Chapter") in the Table of Contents. Thumbnails shall be generated for each page or graphic in the PDF file. The opening view for each PDF document shall be as follows:
    1. Initial View: Bookmarks and Page.
    2. Magnification: Fit in Window.
    3. The file shall open to the Contractor's transmittal letter, with bookmarks to the left. The first bookmark shall be linked to the Table of Contents.

PDF document properties shall include the submittal number for the document title and the Contractor's name for the author.

- i. Electronic submittal file sizes shall be limited to 10 MB. When multiple files are required for a submittal the least number of files possible shall be created.
- j. The Contractor shall post submittals and retrieve the Engineer's submittal review comments through Procore accessible through the Internet. Instruction on procedures for posting and retrieving submittals will be provided after award of the Contract.
- k. Facsimiles (fax) will not be acceptable. Engineer will not accept submittals from anyone but Contractor. Submittals shall be consecutively numbered in direct sequence of submittal and without division by subcontracts or trades.
- l. The Contractor shall allow a minimum of 20 Working Days for review of submittals unless specified.

#### 3.8.1.2 Resubmittal of Drawings and Data.

1. Contractor shall accept full responsibility for the completeness of each resubmittal. Contractor shall verify that all corrected data and additional information previously requested by Engineer are provided on the resubmittal.
2. When corrected copies are resubmitted, Contractor shall direct specific attention to all revisions in writing and shall list separately any revisions made other than those called for by Engineer on previous submittals. Requirements specified for initial submittals shall also apply to resubmittals. Resubmittals shall bear the number of the first submittal followed by a letter (A, B, etc.) or a unique identification that indicates the initial submittal and correct sequence of each resubmittal.
3. Resubmittals shall be made within 30 Calendar Days of the date of the letter returning the material to be modified or corrected, unless within 14 Calendar Days Contractor submits an acceptable request for an extension of the stipulated time period, listing the reasons the resubmittal cannot be completed within that time.
4. The need for more than 1 resubmittal, or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the Contract Times unless delay of the Work is the direct result of a change in the Work authorized by a Change Order or failure of Engineer to review and return any submittal to Contractor within the specified review period.
5. Provide one submittal for items pertaining to only one specification section. If an item consists of two or more components from several sources that comprise a unit (e.g., valves and actuators), submit each item concurrently and with a separate letter of transmittal for a complete initial submittal for all components.

#### 3-8.1.3 Color Selection.

- a. Contractor shall submit samples of colors and finishes for all accepted products before Engineer will coordinate the selection of colors and finishes with Agency. Engineer will prepare a schedule of finishes that include the colors and finishes selected for both manufactured products and for surfaces to be field painted or finished and will furnish this schedule to Contractor within 60 Calendar Days after the date of acceptance of the last color or finish sample.

#### 3-8.1.4 Operations and Maintenance Data and Manuals.

1. Adequate operation and maintenance information shall be supplied for all equipment requiring maintenance or other attention. The equipment supplier shall prepare a Project specific operation and maintenance manual for each type of equipment indicated in the individual equipment sections or the equipment schedule.
2. Parts lists and operating and maintenance instructions shall be furnished for other equipment not listed in the individual equipment sections or the equipment schedule.
3. Operation and maintenance manuals shall include the following:
  - a. Equipment function, normal operating characteristics, and limiting conditions.
  - b. Assembly, installation, alignment, adjustment, and checking instructions.
  - c. Operating instructions for startup, routine and normal operation, regulation and control, shutdown, and emergency conditions.
  - d. Lubrication and maintenance instructions.
  - e. Guide to troubleshooting.
  - f. Parts lists and predicted life of parts subject to wear.
  - g. Outline, cross section, and assembly drawings; engineering data; and wiring diagrams.
  - h. Test data and performance curves, where applicable.
4. The operation and maintenance manuals shall be in addition to any instructions or parts lists packed with or attached to the equipment when delivered, or which may be required by Contractor.
5. Manuals shall be submitted in electronic format to the Engineer prior to the date of shipment of the equipment. The manuals shall be submitted and the Engineer's review comments retrieved, through the Project website accessible through the Internet. Instruction on procedures for posting and retrieving O&M submittals and review comments will be provided after award of the Contract. When the O&M manuals are reviewed "RETURNED FOR CORRECTION," the corrections shall be made as instructed by the Engineer or Consulting Engineer, and corrected manuals resubmitted to the Engineer or Consulting Engineer. When review by the Engineer is complete, 3 copies of each electronic O&M manual shall be delivered on CD-ROM to the Engineer. Each CD shall contain only 1 copy of 1 manual. Delivery of the final O&M shall be made 30 Calendar Days prior to placing the equipment in operation.
6. All material shall be marked with Project identification, and inapplicable information shall be marked out or deleted.
7. Shipment of equipment will not be considered complete until all required manuals and data have been received.

#### 3-8.1.5 Electronic Operations and Maintenance Manuals.

1. Electronic manuals shall be in Adobe Acrobat's PDF and shall be prepared at a resolution between 300 and 600 dpi, depending on document type. OCR capture shall be performed on these documents. OCR settings shall be performed with the "original image with hidden text" option in Adobe Acrobat Exchange.
2. File size shall be limited to 10 MB. When multiple files are required the least number of files possible shall be created. File names shall be in the format OMXXXXX-YYYZ-V.pdf, where XXXXX is the 5-digit number corresponding to the specification section, YYY is a 3-digit O&M



manual number, e.g., 001, Z is the letter signifying a resubmittal, A, B, C, etc, and V is a number used only when more than one 10 MB file is required for an O&M manual.

3. Documents prepared in PDF format shall be processed as follows:  
Pages shall be searchable (processed for optical character recognition) and indexed when multiple files are required.
  - a. Of material to update the manual provided by the manufacturer. Pages shall be rotated for viewing in proper orientation.
  - b. A bookmark shall be provided in the navigation frame for each entry in the Table of Contents.
  - c. Embedded thumbnails shall be generated for each completed PDF file.
  - d. The opening view for PDF files shall be as follows:
  - e. Initial View: Bookmarks and Page
  - f. Page Number: Title Page (usually Page 1)
  - g. Magnification: Set to Fit in Window
  - h. Page: Single Page
  - i. Where the bookmark structure is longer than 1 page, the bookmarks shall be collapsed to show the chapter headings only.
  - j. When multiple files are required the first file of the series (the parent file) shall list every major topic in the Table of Contents. The parent file shall also include minor headings bookmarked based on the Table of Contents. Major headings, whose content is contained in subsequent files (children) shall be linked to be called from the parent to the specific location in the child file. The child file shall contain bookmark entries for both major and minor headings contained in the child file. The first bookmark of any child file shall link back to the parent file and shall read as follows "Return to the Equipment Name Table of Contents," e.g., Return to the Polymer Feed System Table of Contents.
  - k. Drawings shall be bookmarked individually.
  - l. Files shall be delivered without security settings to permit editing, insertion and deletion.

#### 3-8.1.6 Labeling.

- a. At a minimum, the following information shall be included on all final O&M manual materials, including thumb drives and hard copy manuals:
  - I. Equipment name and/or O&M title spelled out in complete words.
  - II. Project Name.
  - III. Agency Project/Contract Number.
  - IV. Specification Section Number. Example: "Section 15 55 00"
  - V. Manufacturer's name.
  - VI. File Name and Date.

#### 3-8.2 Working Drawings.

ADD the following:

1. Working Drawings shall be of a size and scale to clearly show all necessary details and submitted electronically into Procore.

DELETE Table 3-8.2 in its entirety and REPLACE with following:

**TABLE 3-8.2**

Item	Section/ Drawing No.	Title	Subject
1	3-12.5.2	Sewage Bypass and Pumping Plan	Sanitary Sewers
2	3-12.8.2	Dewatering Plan	Water Pollution Control
3	5-7.2.2	Shoring Plan	Safety
4	300-3.2	Cofferdams	Structure Excavation & Backfill
5	303-1.6.1	General	Falsework
6	303-1.7.1	General	Placing Reinforcement
7	303-3.1	General	Prestressed Concrete Construction
8	304-1.1.2	Falsework Plans	Structural Steel
9	306-8.8 SDW- 154*	Valves, Hydrants, and Appurtenances	Water Valve Bypass Details for Mainlines 16-Inch and Larger
10	306-8.8.3	Thrust Blocks and Anchor Blocks	Unless specified otherwise, design of all size water main thrust blocks and anchor blocks
11	307-1.1	General	Jacking Operations
12	307-2.1	General	Tunneling Operations
13	308-3	Submittals	Microtunneling
14	601-2.1.2	Engineered Traffic Control Plan (TCP)	Temporary Traffic Control for Construction and Maintenance Work Zones
15	1001-3	Storm Water Pollution Prevention Plan (SWPPP)	Water Pollution Control
16	1001-4	Water Pollution Control Plan (WPCP)	Water Pollution Control

\* Note: The distance dimensions shown between the bypass pipes and the mainlines are subject to change to field conditions.

Items listed in Table 3-8.2, except for items 1, 2 and, 5, shall be prepared by a Civil or Structural Engineer registered by the State of California. Item 15 shall be prepared by a Qualified SWPPP Developer (QSD) in accordance with 1001 3, "Storm Water Pollution Prevention Plan (SWPPP)." Item 16 shall be prepared in accordance with 1001-4, "Water Pollution Control Plan (WPCP)."

### 3-8.3 Shop Drawings.

ADD the following:

1. Shop Drawings shall be submitted electronically to the Agency.
2. Additional Shop Drawings may be required by the Special Provisions and technical specifications.
3. Shop drawings shall bear the Contractor’s certification that the Contractor has reviewed, checked and approved the Shop Drawings and that they are in conformance with the requirements of the Contract.

DELETE Table 3-8.3 in its entirety and REPLACE with following:

**TABLE 3-8.3**

<b>TABLE 3-8.3</b>			
Item	Subsection	Title	Subject
1	207-2.5	Joints	Reinforced Concrete Pipe
2	207-8.4	Joints	Vitrified Clay Pipe
3	209-2.2.2	Shop Drawings	Steel Pipe and Fittings
4	216-1	General	Precast Reinforced Concrete Box
5	218-1	General	Precast Vault
6	304-1.1.1	Shop Drawings	Structural Steel
7	304-2.1	General	Metal Hand Railings

### 3-8.4 Supporting Information.

ADD the following:

1. The Contractor shall submit samples of the materials with cut sheets of the products. The Contractor shall organize cut sheets for review and approval by the Engineer prior to use on the Project and identify deviation from any of the specified material clearly, including cut sheets and samples of both the specified material and basis for the substitution. Included should be the Agency’s Project Name, Project Number, and the Engineer’s name, Contractor Name, and Submittal Number and clearly indicate the specific product to be used.
2. When photos of material are required, they shall be clear in resolution, identify the specific item for review, and shall indicate the name of the item, source, and date taken. The material shown in the photo shall be currently available for use on the Project.
3. For landscaping and irrigation materials, the Contractor shall submit samples and test results to the Engineer within 15 Working Days of the Notice to Proceed.
4. Test sections (“Mock ups”) of materials as required in the Special Provisions shall be accepted by the Engineer before proceeding with the Work.
5. The Contractor shall provide and keep up-to-date a complete “As-Built” record set of blue-line prints, which shall be corrected in red daily and show every change from the original Drawings and Specifications and the exact “As-Built” locations, sizes and kinds of equipment, underground piping, valves, and all other Work not visible at surface grade. Prints for this purpose may be obtained from the Agency at cost. This set of Drawings shall be kept on the



job and shall be used only as a Record Set and shall be delivered to the Engineer within 10 Calendar Days of completion of the Work. Payment for performing the Work required by Section 2-5.4 shall be included in the various Bid items and no additional payment will be made therefor.

### 3-8.6 Manufacturer's Operation, Maintenance, and Warranty Instructions.

To sentence (1), DELETE in its entirety and SUBSTITUTE with the following:

For each pre-manufactured product covered by a manufacturer's warranty, Contractor shall submit 1 electronic copy and 3 bound original or legal copies prior to acceptance of the Contract.

### 3-9 SUBSURFACE DATA.

DELETE in its entirety and SUBSTITUTE with the following:

#### 3-9 TECHNICAL STUDIES AND SUBSURFACE DATA.

1. If reports of explorations and tests of Site conditions are referenced in the Contract Documents, Contractor is encouraged to inspect the Site, acquire, and review these reports, and take other necessary steps to thoroughly familiarize oneself with the Site conditions. If a review of the documents and Site inspection indicate an obstruction or utility conflict with the proposed work, immediately notify the Engineer.
2. Subsurface data shall include geotechnical reports, groundwater elevations, soil analyses and characterization, and other information included or referenced in the Special Provisions and shall apply only at the location of the test holes and to the depths indicated. Additional subsurface exploration may be performed by Bidders or the Contractor at their own expense.
3. Contractor is encouraged to review subsurface data, examine the Site and assess the Site conditions pertaining to the Work. If a review of the documents and Site inspection indicate an obstruction or utility conflict with the proposed work, immediately notify the Engineer.
4. Soil test reports for test holes which have been drilled are available for review at the office of the Engineer. Additional exploration may be performed at Contractor's own expense.
5. The indicated groundwater elevation is that which existed on the date specified in the data. It shall be Contractor's responsibility to determine and allow for the groundwater elevation on the date the Work is performed. A difference in groundwater elevation between what is shown in soil boring logs and what is encountered during construction shall not be considered as a basis for Extra Work in accordance with 2-8, "Extra Work".

### 3-10 SURVEYING.

DELETE this Section in its entirety and replace with the following:

**3-10.1 Permanent Survey Markers.** The Contractor shall not cover or disturb permanent survey monuments or benchmarks without the consent of the Engineer. Where the Engineer concurs, in writing, with the Contractor that protecting an existing monument in place is impractical, the Contractor shall employ a licensed land surveyor or a registered civil engineer authorized to practice land surveying within the State of California, hereinafter Surveyor, to establish the location of the monument before it is disturbed. The Contractor shall have the monument replaced by the Surveyor no later than thirty (30) days after construction at the site of the

replacement is completed. The Surveyor shall file corner record(s) as required by §§ 8772 and 8773, et seq. of the California Business and Professions Code.

When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the Contractor shall adjust the monument frame and cover to the new grade within 7 days of paving unless the Engineer shall approve otherwise. Monument frames and covers shall be protected during street sealing or painting projects or be cleaned to the satisfaction of the Engineer.

**3-10.2 Survey Service.** The Contractor shall hire and pay for the services of a Surveyor, hereinafter Surveyor to perform all work necessary for establishing control, construction staking, records research and all other surveying work necessary to construct the work, provide surveying services as required herein and provide surveying, drafting and other professional services required to satisfy the requirements of the Land Surveyors Act. Surveyor shall be resident on the site during all surveying operations and shall personally supervise and certify the surveying work.

**3-10.2.1 Submittal of Surveying Data.** All surveying data submittals shall conform to the requirements of Section 3-8, "Submittals", herein. The Contractor shall submit grade sheets to the Engineer before commencing work in the area affected by the grade sheets. The Contractor shall submit field notes for all surveying required herein to the Engineer within ten days of performing the survey. All surveying field notes, grade sheets and survey calculations shall be submitted in bound form on 215mm by 280 mm (8<sup>1</sup>/<sub>2</sub>" by 11") paper. The field notes, calculations and supporting data shall be clear and complete. Supporting data shall include all maps, affidavits, plats, field notes from earlier surveys and all other evidence used by the Surveyor to determine the location of the monuments set. The field notes and calculations will be labeled with name of the Surveyor, the party chief, the field crewmembers and the author of the field notes or calculations. They shall be annotated with the date of observation or calculation, be numbered with consecutive page numbers and shall be readable without resort to any electronic aid, computer program or documentation for any computer program. The field notes shall be prepared in conformance with the CALTRANS "Surveys Manual". The Contractor shall have a Record of Survey prepared by the Surveyor and file it in conformance with §§ 8700 - 8805 of the State of California Business and Professions Code when the Surveyor performs any surveying that such map is required under §§ 8762 of the State of California Business and Professions Code and whenever the Surveyor shall establish, set or construct any permanent survey monument. SDRS drawing M-10 type monuments, bolts, spikes, leaded tacks and nails (when set in concrete), iron pipes, reinforcing steel and all monuments and marks that are at, or accessory to, property corners and street centerlines are permanent survey monuments. The Record of Survey shall show all monuments set, control monuments used, the basis of bearings and all other data needed to determine the procedure of survey and the degree of accuracy attained by the field surveying including the unadjusted ratio of closure. The unadjusted ratio of closure shall not exceed 1 part in 40,000. The record of survey shall show the location and justification of location of all permanent monuments set and their relation to the street right-of-way. Record(s) of Survey(s) shall be submitted for the Engineer's review and approval before submittal to the County Surveyor and before submittal to the County Recorder.

**3-10.2.2 Survey Requirements.** Stakes shall be set at offsets approved by the Engineer at no greater intervals than specified in TABLE 3-10.2.2(A) as measured along the project stationing. Stakes shall be set to show the location and grade of future curbs adjacent to traffic signal locations where the curb is not being built as a part of this contract. Staking and marking shall be completed by the Surveyor and inspected and approved by the Engineer before the start of construction in the area marked. Centerline monument shall have the disk stamped with the date the monument was set and the registration number of the Surveyor. Habitat mitigation sites and other areas to be preserved that are shown on the plans shall be staked and flagged prior to the start of any other activities within the limits of the work. When curb and gutter does not exist and is not being installed as a part of the project the location of adjacent facilities being constructed as a part of the contract the Contractor shall place stakes defining the horizontal and vertical location of such adjacent utility vaults, poles or other facilities that are being installed as parts of, or adjunct to, the project either by the Contractor and/or those noted on the plans as to be installed by others.

**TABLE 3-10.2.2(A)  
Survey Requirements for Construction Staking**

<b>Feature Staked</b>	<b>Stake Description ②</b>	<b>Centerline or Parallel to Centerline Spacing④, ⑥</b>	<b>Lateral Spacing ③, ⑥</b>	<b>Setting Tolerance (Within)</b>
Street Centerline	SDRS M-10 Monument	≤1000', Street Intersections, Begin and end of curves, only when shown on the plans	on street centerline	0.02'  Horizontal, also see Section 2-9.2.1 herein
Clearing	Lath in soil, painted line on PCC & AC surfaces	lath - Intervisible, ≤ 50' on tangents & ≤ 25' on curves, Painted line - continuous	at clearing line	1' Horizontal
Slope	RP + Marker Stake	Intervisible and ≤ 50'	Grade Breaks & ≤ 25'	0.1' Vertical & Horizontal
Fence	RP + Marker Stake	≤ 200' on tangents, ≤ 50' on curves when R ≥ 1000' & 25' on curves when R ≤ 1000'	N/A  (constant offset)	0.1' Horizontal
Rough Grade Cuts or Fills ≥ 10 m (33')	RP + Marker Stake	≤ 50'	N/A	0.1' Vertical & Horizontal
Final Grade (includes top of: Basement soil, subbase and base)	RP + Marker Stake, Blue-top in grading area	≤ 50' on tangents & curves when R ≥ 1000' & ≤ 25' on curves when R ≤ 1000'	≤ 22'	<sup>3</sup> / <sub>8</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical



Feature Staked	Stake Description ②	Centerline or Parallel to Centerline Spacing④, ⑥	Lateral Spacing ③, ⑥	Setting Tolerance (Within)
Asphalt Pavement Finish Course	RP, paint on previous course	≤ 25' or as per the intersection grid points shown on the plan whichever provides the denser information	edge of pavement, paving pass width, crown line & grade breaks	<sup>3</sup> / <sub>8</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical
Drainage Structures, Pipes & similar Facilities①, ⑦	RP + Marker Stake	intervisible & ≤ 25', beginning and end, BC & EC of facilities, Grade breaks, Alignment breaks, Junctions, Inlets & similar facilities, Risers & similar facilities (except plumbing), Skewed cut-off lines	as appropriate	<sup>3</sup> / <sub>8</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical
Curb	RP + Marker Stake	≤ 25', BC & EC, at <sup>1</sup> / <sub>4</sub> Δ, <sup>1</sup> / <sub>2</sub> Δ & <sup>3</sup> / <sub>4</sub> Δ on curb returns & at beginning & end	(constant offset)	<sup>3</sup> / <sub>8</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical
Traffic Signal ①		Vertical locations shall be based on the ultimate elevation of curb and sidewalk		
Signal Poles & Controller ①	RP + Marker Stake	at each pole & controller location	as appropriate	<sup>3</sup> / <sub>8</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical
Junction Box ①	RP + Marker Stake	at each junction box location	as appropriate	<sup>3</sup> / <sub>8</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical
Conduit ①	RP + Marker Stake	≤ 50' on tangents & curves when R ≥ 1000' & ≤ 25' on curves when R ≤ 1000' or where grade ≤ 0.30%	as appropriate	<sup>3</sup> / <sub>8</sub> " Horizontal & when depth cannot be measured from existing pavement <sup>1</sup> / <sub>4</sub> " Vertical
Minor Structure ①	RP + Marker Stake + Line Stake	for catch basins: at centerline of box, ends of box & wings & at each end of the local depression ⑤	as appropriate	<sup>3</sup> / <sub>8</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical (when vertical data needed)
Abutment Fill	RP + Marker Stake + Line Stake	≤ 50' & along end slopes & conic transitions	as appropriate	0.1' Vertical & Horizontal
Wall ①	RP + Marker Stake + Line Point +Guard Stake	≤ 50' and at beginning & end of: each wall, BC & EC, layout line angle points, changes in footing dimensions &/or elevation & wall height	as appropriate	<sup>1</sup> / <sub>4</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical
Major Structure ⑤				
Footings, Bents, Abutments & Wingwalls	RP + Marker Stake + Line Point +Guard Stake	10' to 33' as required by the Engineer, BC & EC, transition points & at beginning & end. Elevation points on footings at bottom of columns	as appropriate	<sup>3</sup> / <sub>8</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical
Superstructures	RP	10' to 33' sufficient to use string lines, BC & EC, transition points & at beginning & end. Elevation points on footings at bottom of columns	as appropriate	<sup>3</sup> / <sub>8</sub> " Horizontal & <sup>1</sup> / <sub>4</sub> " Vertical

Feature Staked	Stake Description ②	Centerline or Parallel to Centerline Spacing④, ⑥	Lateral Spacing ③, ⑥	Setting Tolerance (Within)
Miscellaneous ⑤				
Contour Grading ①	RP + Marker Stake	≤ 50'	along contour line	0.1' Vertical & Horizontal
Utilities ①, ⑦	RP + Marker Stake	≤ 50' on tangents & curves when R ≥ 1000' & ≤ 25' on curves when R ≤ 1000' or where grade ≤ 0.30%	as appropriate	3/8" Horizontal & 1/4" Vertical
Channels, Dikes & Ditches ①	RP + Marker Stake	intervisible & ≤ 100', BC & EC of facilities, Grade breaks, Alignment breaks, Junctions, Inlets & similar facilities	as appropriate	0.1' Horizontal & 1/4" Vertical
Signs ①	RP + Marker Stake + Line Point + Guard Stake	At sign location	Line point	0.1' Vertical & Horizontal
Subsurface Drains ①	RP + Marker Stake	intervisible & ≤ 50', BC & EC of facilities, Grade breaks, Alignment breaks, Junctions, Inlets & similar facilities, Risers & similar facilities	as appropriate	0.1' Horizontal & 1/4" Vertical
Overside Drains ①	RP + Marker Stake	longitudinal location	At beginning & end	0.1' Horizontal & 1/4" Vertical
Markers ①	RP + Marker Stake	for asphalt street surfacing ≤ 50' on tangents & curves when R ≥ 1000' & ≤ 25' on curves when R ≤ 1000'.	At marker location(s)	1/4" Horizontal
Railings & Barriers ①	RP + Marker Stake	At beginning & end and ≤ 50' on tangents & curves when R ≥ 1000' & ≤ 25' on curves when R ≤ 1000'	at railing & barrier location(s)	3/8" Horizontal & Vertical
AC Dikes ①	RP + Marker Stake	At beginning & end	as appropriate	0.1' Horizontal & Vertical
Box Culverts		10' to 33' as required by the Engineer, BC & EC, transition points & at beginning & end. Elevation points on footings & at invert	as appropriate	3/8" Horizontal & 1/4" Vertical
Pavement Markers①	RP	200' on tangents, 50' on curves when R ≥ 1000' & 25' on curves when R ≤ 1000'. For PCC surfaced streets lane cold joints will suffice	at pavement marker location(s)	1/4" Horizontal

- ① Staking for feature may be omitted when adjacent marker stakes reference the offset and elevation of those features and the accuracy requirements of the RP meet the requirements for the feature.
- ② Reference points shall be sufficiently durable and set securely enough to survive with accuracy intact throughout the installation & inspection of the features or adjacent facilities for which they provide control. RP means reference point for the purposes of this table.
- ③ Perpendicular to centerline.
- ④ Some features are not necessarily parallel to centerline but are referenced thereto.
- ⑤ Multi-plane surfaced features shall be staked so as to provide line & grade information for each plane of the feature.
- ⑥ ≥ means greater than, or equal to, the number following the symbol. ≤ means less than, or equal to, the number following the symbol.
- ⑦ The cut datum for storm drainage & sanitary sewer pipes & similar structures shall be their invert. The cut datum for all other utilities shall be the top of their pipe or conduit.

All guard stakes, line stakes and lath shall be flagged. Unless otherwise approved by the Engineer flagging, paint and marking cards shall be the color specified in TABLE 3-9.2.2(B)

**TABLE 3-10.2.2(B)**  
**Survey Stake Color Code for Construction Staking**

Type of Stake	Description	Color*
Horizontal Control	Coordinated control points, control lines, control reference points, centerline, alignments, etc.	White/Red
Vertical Control	Bench marks	White/Orange
Clearing	Limits of clearing	Yellow/Black
Grading	Slope, intermediate slope, abutment fill, rough grade, contour grading, final grade, etc.	Yellow
Structure	Bridges, sound and retaining walls, box culverts, etc.	White
Drainage, Sewer, Curb	Pipe culverts, junction boxes, drop inlets, headwalls, sewer lines, storm drains, slope protection, curbs, gutters, etc.	Blue
Right-of-Way	Fences, R/ W lines, easements, property monuments, etc.	White/Yellow
Miscellaneous	Signs, railings, barriers, lighting, etc.	Orange

\* Flagging and marking cards, if used.

**3-10.3 Private Engineers.** Surveying by private engineers on the Work shall conform to the quality and practice required by the Engineer.

**3-10.4 Line and Grade.** All work shall conform to the lines, elevations, and grades shown on the Plans.

Three consecutive points set on the same slope shall be used together so that any variation from a straight grade can be detected. Any such variation shall be reported to the Engineer. In the absence of such report, the Contractor shall be responsible for any error in the grade of the finished work.

Grades for underground conduits will be set at the surface of the ground. The Contractor shall transfer them to the bottom of the trench.

**3-10.5 Payment for Survey.** Payment for work performed to satisfy the requirements of Sections 3-10.1 through 3-10.4 shall be included in the actual bid items requiring the survey work and no additional payment will be made. Extension of unit prices for extra work shall include full compensation for attendant survey work and no additional payment will be made. Payment for the replacement of disturbed monuments and the filing of records of survey and/or corner



records, including filing fees, shall be incidental to the work necessitating the disturbance of said monuments and no additional payment will be made.

### 3-12 CONTRACT INFORMATION SIGNS.

ADD the following:

Signs shall not be posted until approved by the Engineer. The Contractor shall complete and submit a Review for Sign Permit (form P-11), available at:

<https://www.carlsbadca.gov/services/depts/planning/applications.asp>

### 3-12 WORK SITE MAINTENANCE.

#### 3-12.1 General.

ADD the following:

1. Maintain Site improvements including any temporary facilities, equipment, or other materials. Remove graffiti encountered on the Site within 24 hours. See also SECTION 400 - PROTECTION AND RESTORATION.
2. As a condition of Final Payment, the Contractor shall submit a signed and notarized affidavit stating that all brush, trash, debris, and surplus materials resulting from this Project have been disposed of in a legal manner. The cost of disposal is the Contractor's responsibility.
3. The Contractor shall provide and maintain enclosed toilets for the use of their employees. Toilets must be kept in a neat and sanitary condition and ensure that they comply with all applicable laws, ordinances, and regulations pertaining to public health and sanitation of dwellings and camps. The cost of such is the Contractor's responsibility.
4. If required in the Special Provisions, the Contractor shall provide and maintain enclosed toilets for the use of the Agency's and Contractor's officers, employees, or agents. Toilets must be kept in a neat and sanitary condition and ensure that they comply with all applicable laws, ordinances, and regulations pertaining to public health and sanitation of dwellings and camps. The cost of such is the Contractor's responsibility.
5. The Contractor shall maintain drainage within and through the work areas. Earth dams will not be permitted in paved areas. Temporary dams of sandbags, asphaltic concrete, or other acceptable material will be permitted, when necessary, by the SWPPP and/ or BMP plan. Such dams shall be removed from the Site as soon as their use is no longer necessary.
6. Work Site maintenance shall be conducted on non-workdays when increased levels of maintenance are deemed necessary, in the opinion of the Engineer, to preserve the health safety or welfare of the public and or to comply with applicable regulations.
7. Disposal of all rubbish and surplus materials is incidental to Work Site maintenance. Disposal shall be made off the Site and shall be in accordance with:
  - a. Local codes and ordinances that govern locations and methods of disposal.
  - b. All applicable safety laws.
  - c. Requirements of Subpart H, Section 1926.252 of the OSHA Safety and Health Standards for Construction.

8. Work Site maintenance is considered incidental to the items of work that they are associated with and no additional payment will be made.
9. Cleanup and Dust Control. Throughout all phases of construction, including suspension of the Work, and until the final acceptance, the Contractor shall keep the Site clean and free from rubbish and debris. The Contractor shall also abate dust nuisance by cleaning, sweeping, and sprinkling with water, or other means as necessary. The use of water resulting in mud on public streets will not be permitted as a substitute for sweeping or other methods.

### 3-12.2 Air Pollution Control.

ADD the following:

1. Contractor shall carry out effective measures whenever and as often as necessary to prevent Contractor's operation from producing dust in amounts damaging to property, cultivated vegetation, domestic animals, or causing a nuisance to persons living or occupying buildings in the vicinity. Contractor shall be responsible for any damage resulting from any dust originating from Contractor's operations. The dust abatement measures shall be continued until Contractor is relieved of further responsibility by the Engineer.
2. Contractor shall adhere to Air Pollution Control District County of San Diego regulations for equipment used on the Job Site. See Section 2-2.2 and the technical specifications for permitting requirements.

### 3-12.3 Noise Control.

ADD the following:

1. All internal combustion engines used in the Work shall be equipped with mufflers in good repair and are subject to the City Noise Control Ordinance, Carlsbad Municipal Code Chapter 8.48.
2. Site mustering is not allowed prior to and after the allowable working hours.

### 3-12.4 Storage of Equipment and Materials.

#### 3-12.4.1 General.

ADD the following:

1. Equipment and material storage shall be confined to areas approved by the Engineer. Disposal of all rubbish and surplus materials shall be at the Contractor's expense.
2. The Contractor shall order, purchase, transport, coordinate delivery, accept delivery, confirm the quantity and quality received, prepare storage area(s), store, handle, protect, move, relocate, remove and dispose excess of all materials used to accomplish the Work.
3. Materials shall be delivered to the Work Site only during Working Hours and shall be accompanied by bills of lading that shall clearly state for each delivery: the name of the Contractor as consignee, the Project name and number, address of delivery and name of consignor and a description of the material(s) shipped.
4. Prior to storage of any materials which have been shipped to or by the Contractor to any location within the City's boundaries the Contractor shall provide the Engineer a copy of lease agreements for each property where such materials are stored. The lease agreement shall clearly state the term of the lease, the description of materials allowed to be stored and shall

provide for the removal of the materials and restoration of the storage site within the time allowed for the Work.

5. All such storage shall conform to all laws and ordinances that may pertain to the materials stored and to preparation of the storage site and the location of the site on which the materials are stored. Storage of hazardous wastes, construction equipment material, and parking and fueling of equipment shall not occur in biologically sensitive areas.
6. Loss, damage or deterioration of all stored materials shall be the Contractor's responsibility. Conformance to the requirements of this section, both within and outside the limits of work is a part of the Work. The Engineer shall have the right to verify the suitability of materials and their proper storage at any time during the Work.
7. The Contractor shall furnish and maintain in good condition all equipment and facilities as required for the proper execution and inspection of the Work. Such equipment and facilities shall meet all requirements of applicable ordinances and laws.
8. Restore the storage area to an equal or better condition as deemed necessary by the Engineer and at no additional cost to the Agency.
10. When required by the Engineer, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each Working Day for the purpose of keeping paved areas acceptably clean wherever construction, including restoration, is incomplete.
11. Care shall be taken to prevent spillage on haul routes. Any such spillage shall be removed immediately, and the area cleaned.
12. Excess excavation material from catch basins or similar structures shall be removed from the Site immediately. Sufficient material may remain for use as backfill if permitted by the Specifications. Forms and form lumber shall be removed from the Site as soon as practicable after stripping.
13. Failure of the Contractor to comply with the Engineer's cleanup orders may result in an order to suspend Work until the condition is corrected. No additional compensation will be allowed because of such suspension.
14. Cleanup and dust control required in the Contract shall also be executed on weekends and other non-Working Days when needed to preserve the health safety or welfare of the public. The Contractor shall conduct effective cleanup and dust control throughout the duration of the Contract. The Engineer may require increased levels of cleanup and dust control that, in his/her sole discretion, are necessary to preserve the health, safety and welfare of the public. Cleanup and dust control shall be considered incidental to the items of Work that they are associated with and no additional payment will be made for them.
15. Vermin Control. At the time of acceptance, structures entirely constructed under the Contract shall be free of rodents, insects, vermin, and pests. Necessary extermination work shall be arranged and paid for by the Contractor as part of the Work within the Contract time and shall be performed by a licensed exterminator in accordance with requirements of governing authorities. The Contractor shall be liable for injury to persons or property and responsible for the elimination of offensive odors resulting from extermination operations.
16. Temporary Light, Power, and Water. The Contractor shall furnish, install, maintain, and remove all temporary light, power, and water at its own expense. These include piping, wiring, lamps, and other equipment necessary for the Work. The Contractor shall not draw water from any fire hydrant (except to extinguish a fire), without obtaining permission from



the water agency concerned. The Contractor shall obtain a construction meter for water used for the construction, plant establishment, maintenance, cleanup, testing and all other work requiring water related to this Contract. The Contractor shall contact the appropriate water agency for requirements. The Contractor shall pay all costs of temporary light, power and water including hookup, service, meter and any, and all, other charges, deposits and/or fees for them. These costs shall be considered incidental to the items of Work that they are associated with and no additional payment will be made for them.

#### 3-12.4.2 Storage in Public Streets.

DELETE in its entirety and SUBSTITUTE with the following:

1. Construction materials shall not be stored in streets, roads, or highways for more than 5 Calendar Days after unloading. All materials not installed or used in construction within 5 Calendar Days after unloading shall be stored at a location approved by the Engineer.
2. Construction equipment shall not be stored at the Work Site before its actual use nor for more than 5 Calendar Days after it is no longer needed. Time necessary for repair or assembly of equipment may be authorized by the Engineer.
3. Excavated material, except that which is to be used as backfill in the adjacent trench, shall not be stored in public streets unless otherwise permitted. Immediately after placing backfill, all excess material shall be removed.
4. The Contractor shall not store equipment for traffic control in right of way.

ADD the following:

#### 3-12.4.3 Storage and Staging Areas.

1. Storage and staging areas are the Contractor's responsibility. If the Plans designate a staging location within the Project or in close proximity, the Contractor may utilize such area for their use. The storage and staging areas shall be as close as possible to the Site. Contractor is responsible for obtaining any permits, leases, or any other items necessary to obtain staging areas.
2. Storage of hazardous wastes, construction equipment material, and parking and fueling of equipment shall not be allowed in the MHPA or other biologically sensitive areas. Ensure the fueling of vehicles occurs only within designated staging areas using appropriate catch basins and devices.
3. Return the storage and staging area and the adjacent area to an equal or better condition as deemed necessary by the Engineer, at no additional cost to the Agency.
4. The Contractor shall provide the Engineer a copy of the lease agreement for any property to be used for the storage of materials or equipment prior to delivery or storage of any materials or equipment. Each lease agreement shall clearly state the term of the lease and a description of the materials or equipment allowed to be stored and shall provide for the removal of the materials or equipment and restoration of the storage site within the time allowed for the Work.
5. Construction equipment shall not be stored at the Work Site before its actual use on the Work nor for more than 5 Calendar Days after it is no longer needed. Time necessary for repair or assembly of equipment may be authorized by the Engineer.

### 3-12.6 Water Pollution Controls.

#### 3-12.6.2 Best Management Practices (BMPs).

ADD the following:

1. Contractor shall submit a BMP plan as a submittal to the Agency.

#### 3-12.6.3 Storm Water Pollution Prevention Plan (SWPPP).

ADD the following:

1. The Contractor shall evaluate the requirements for the preparation of a SWPPP for Work within the City's boundary by reviewing the Determination of SWPPP Tier Level and Construction Threat Level (form E-32), which may be obtained at:

<https://www.carlsbadca.gov/departments/community-development/land-development-engineering/engineering-applications-forms>

2. The Contractor shall review the criteria requiring the preparation of a SWPPP conforming with the State Water Resources Control Board Order No. 2022-0057-DWQ, NPDES General Permit No. CAS000002, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (the Construction General Permit or CGP). The CGP and other information are available at:

[https://www.waterboards.ca.gov/water\\_issues/programs/stormwater/construction/general\\_permit\\_reissuance.html](https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction/general_permit_reissuance.html)

3. If a SWPPP has been prepared specifically for the Project and is included as a part of the Contract Documents, the Contractor shall use the SWPPP as a baseline document and shall amend the SWPPP, with the Engineer's approval, as necessary to include the Contractor's proposed Construction Schedule, construction operations, and the Site conditions encountered or created during the Work.
4. If the Agency has not prepared a SWPPP for the Project and the Project is subject to coverage under the CGP, the Contractor shall prepare and implement the SWPPP conforming with the CGP requirements.
5. The Contractor shall comply with all requirements of the approved SWPPP and the CGP including implementation during construction by a QSP, The Contractor shall provide all information necessary for the Agency to obtain coverage under the CGP during the electronic submittal of Permit Registration Documents and supporting data necessary for the filing of the storm water Notice of Intent and Notice of Termination. The Contractor shall be responsible for conducting all monitoring and inspections and filing all reports required by and in accordance with the CGP.

##### 3-12.6.3.1 Storm Water Pollution Prevention Plan (SWPPP) Tier 1 or Tier 2 Project.

**If the Project is a Tier 1 or Tier 2 Project, use the following language:**

- A. Water Pollution Prevention. The Contractor shall plan for and implement temporary construction BMPs to mitigate the water quality impacts of land disturbance and non-storm water discharges related to construction activities in accordance the Agency's

current Municipal Stormwater Permit and Carlsbad Municipal Code Chapter 15.12. BMPs are the schedules of activities, prohibitions of practices, maintenance procedures and other management practices employed during construction activities to prevent or reduce pollution of bodies of water protected by the federal Clean Water Act (33 U.S.C. § 1251 *et seq.*) and the state Porter-Cologne Water Quality Control Act (Water Code, § 13000 *et seq.*), which include oceans, lagoons, lakes, streams and other sensitive water bodies and water courses. Construction BMPs also include physical devices and structural construction control measures designed to prevent soil erosion from occurring on the Work Site, or that are designed to prevent sediment from leaving the Work Site, both of which are referred to hereafter as “Water Pollution.” BMPs are also intended to protect the health, safety and welfare of the public and to prevent damage to adjoining public and private property resulting from construction activities.

- B. Pollution prevention practices and the minimum BMPs are required during all 12 months of the year. BMPs and other erosion control practices must be implemented as the most important “first line of defense”. The Agency has adopted the CASQA ‘Stormwater Best Management Practices Handbook: Construction,’ latest edition, as its preferred source for adopting construction BMPs. All BMPs must correspond to the BMP Fact Sheets included in the CASQA Construction Handbook. With the approval of the Engineer, or designee, the Agency may accept comparable BMPs from reputable alternative sources. As used in this section, “Engineer” shall have the same meaning as “Construction Manager”.
- C. The Contractor shall utilize the Agency’s Tier 1 or Tier 2 SWPPP templates and include all applicable elements provided in the template. The SWPPP templates are available on the Agency’s website at [PROJECT ENGINEER insert website address here]. Tier 1 and Tier 2 SWPPP templates include standard storm water prevention construction notes, a Project information block, a Storm Water Compliance Statement, Agency approval block and a BMP Checklist Table. The BMP Checklist Table is intended to help the Contractor select appropriate BMPs best suited to the Project and the Work. Additionally, the SWPPP shall include a Site plan showing the proposed Project Site and depicting the areas of proposed construction and proposed locations of construction BMPs. The Tier 1 and Tier 2 SWPPP plans shall be submitted as additional sheets to the construction plan set.
- D. The Engineer may require Contractor to adopt additional BMPs if the Engineer determines the selected BMP(s) are ineffective or incapable of preventing Water Pollution from escaping the Work site. Tier 1 and Tier 2 SWPPPs must be combined with proper and timely installation of the BMPs, thorough and frequent inspections, maintenance, and documentation. The Contractor shall ensure that the selected BMPs are appropriately incorporated into the Site design and, if required by the Engineer, must employ a qualified professional to ensure proper installation and maintenance of the BMPs.
- E. The Engineer may suspend the Work, consistent with Supplemental General Provisions Section 6-6, at the Contractor’s cost, that create Water Pollution or otherwise violate water quality standards required by the federal Clean Water Act (33 U.S.C. § 1251 *et seq.*) and the state Porter-Cologne Water Quality Control Act (Water Code, § 13000 *et seq.*) if the Engineer determines that the Contractor has failed to satisfy all requirements of this section. If the Contractor violates any provisions of this subsection, or if Water Pollution



occurs in the Work Site for any reason, the Contractor shall immediately notify the Engineer.

- F. The Contractor shall immediately notify the Agency if there is a non-stormwater discharge to the storm drain conveyance system resulting from the Work or Project-related activities. In addition, the Contractor shall, within 24 hours, submit a written report to the Engineer describing the incident and corrective actions taken. If for any reason the Engineer detects Water Pollution, before notification by the Contractor, this written report shall also include an explanation of why the Contractor had not timely notified the Engineer.
- G. Implementation Costs. Preparation, implementation and management of Water Pollution prevention activities are incidental to the items of Work and Agency shall not make additional payment to Contractor for these costs.

### 3-12.6.3.2 Storm Water Pollution Prevention Plan (SWPPP) Tier 3 Project.

#### **PROJECTS GREATER THAN ONE ACRE (TIER 3) – Not Maintenance Only Projects**

If the Project is a Tier 3 Project, use the following language:

**Water Pollution Prevention.** The Contractor shall plan for and implement temporary construction BMPs to mitigate the water quality impacts of land disturbance and non-storm water discharges related to construction activities. BMPs are the schedules of activities, prohibitions of practices, maintenance procedures and other management practices employed during construction activities to prevent or reduce pollution of bodies of water protected by the federal Clean Water Act (33 U.S.C. § 1251, *et seq.*) and the state Porter-Cologne Water Quality Control Act (Water Code, § 13000, *et seq.*), which include oceans, lagoons, lakes, streams and other sensitive water bodies and water courses. Construction BMPs also include physical devices and structural construction control measures designed to prevent soil erosion from occurring on the Work Site, or that are designed to prevent sediment from leaving the Work Site, both of which are referred to hereafter as “Water Pollution.” BMPs are also intended to protect the health, safety and welfare of the public and to prevent damage to adjoining public and private property resulting from construction.

This Project, and all Project Work, requires compliance with Carlsbad Municipal Code Chapter 15.12 and coverage under the California Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2022-0057-DWQ, NPDES No. CAS000002, or subsequent order, and any amendment, revision or re-issuance of it (Construction General Permit).

#### **STORM WATER POLLUTION PREVENTION PLAN DEVELOPMENT AND IMPLEMENTATION**

The Contractor shall prepare and submit to the Engineer a SWPPP in accordance with the current requirements established by the Construction General Permit. As used in this section, “Engineer” shall have the same meaning as “Construction Manager.” The Contractor shall not initiate any land disturbance activities, until the final SWPPP has been accepted by the Engineer. At least 1 copy of the final SWPPP shall be kept at the construction Site and shall be available upon request of a representative of the Regional Water Quality Control Board, State Water Resources Control Board, U.S. Environmental Protection Agency or local storm water management agency.

Requests for a copy of the final SWPPP by members of the public shall be forwarded to the Engineer.

**SWPPP Template Availability.** A model SWPPP, if available, is provided to the Contractor, for use in preparing the Project SWPPP for approval by the Agency. The Contractor shall be responsible for the preparation and implementation of the SWPPP and coordination with the Agency and the Regional Water Quality Control Board. All costs for preparing and implementing the Storm Water Pollution Prevention and Monitoring Plans and coordination with the Agency and the Regional Water Quality Control Board shall be included as part of the contract bid price.

**SWPPP Delivery.** Within 15 Calendar Days after the execution of the Contract, the Contractor shall submit 3 copies of the SWPPP to the Engineer. Contractor will be provided the digital format for SWPPP to complete required sections. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the SWPPP within 15 Calendar Days of receipt of the Engineer's comments and shall allow 5 Calendar Days for the Engineer to review the revisions. Upon the Engineer's acceptance of the SWPPP, 3 additional copies of the SWPPP, incorporating the required changes, shall be submitted to the Engineer. To allow construction activities to proceed, the Engineer may conditionally approve the SWPPP while minor revisions are being completed.

**QSD/QSP Designation.** The Contractor shall designate a QSD and a QSP who has satisfied the certification requirements and received approval by the SWRCB as specified in Construction General Permit. The QSD and QSP shall provide and maintain levels of insurance, and comply with all other insurance-related requirements, as required in Agency Supplemental General Provisions Section 5-4.

**SWPPP Amendments.** All amendments to the SWPPP shall be completed by the Contractor's QSD in a timely manner and provided to the Engineer within 7 Calendar Days. All amendments must be signed and dated by the Contractor's QSD and directly attached to the SWPPP once accepted by the Engineer.

Accepted amendments shall be dated and logged in the SWPPP. Upon acceptance of the amendment, the Contractor shall implement the additional control measures or revised operations. The SWPPP amendment log in the SWPPP shall be maintained by the Contractor's QSD.

The SWPPP shall also be amended if it violates any condition or has not effectively achieved the objective of reducing pollution in storm water discharges. Amendments shall show additional control measures or revised operations, including those in areas not shown in the initially accepted SWPPP, which are required on the Project to control Water Pollution effectively. Amendments to the SWPPP shall be submitted for review and acceptance by the Engineer in the same manner specified for the initially accepted SWPPP.

**SWPPP Implementation.** Upon acceptance of the SWPPP, the Contractor shall be responsible throughout the duration of the Project for installing, constructing, inspecting and maintaining the control measures included in the SWPPP and any amendments thereto and for removing and disposing of temporary control measures. Unless otherwise directed by the Engineer or specified in these supplemental provisions, the Contractor's responsibility for SWPPP implementation shall continue throughout any temporary suspension of Work ordered in accordance with Section 6-6, "Suspension of the Work." Requirements for installation, construction, inspection, maintenance, removal and disposal of control measures are specified in the "Handbook" and these supplemental provisions.

**Permit Registration Documents.** The Contractor's QSD shall then complete final SWPPP, and other required Permit Registration Documents (PRDs), and submit them to the Engineer for review and subsequent submittal to the SWRCB via the Stormwater Multi-Application, Reporting, and Tracking System (SMARTS System).

PRD Item	Responsible Party	Notes
NOI Filing	Agency	Project Engineer/MPM
NOI Fee	Agency	Project Engineer/MPM
Annual Permit Fee	Agency	Project Engineer/MPM
Legally Responsible Person	Agency	Project Engineer/MPM
Assigned Signatory	Agency	Project Engineer/MPM
Data Submitter	Contractor/QSD/QSP	
SWPPP	QSD	
Risk Determination	QSD	
SWPPP Certification Statement	QSD	
SWPPP Amendments	QSD	Must be approved by the Project Engineer/MPM
Site Map	Contractor/QSD	
BMP Exhibit/Erosion Control Notes	Contractor/QSD	
Inspections/Training Records	QSP	
Water Quality Monitoring Reports	QSP	
NOT Preparation and Submittal	Contractor/QSD	Submitted as part of Project Completion Tasks. No later than 90 Calendar Days after Project completion
NOT Certification	Agency	Project Engineer/MPM
Annual Report Preparation and Submittal to SMARTS	Contractor/QSD	By July 15th for prior year period of July 1st through June 30th



PRD Item	Responsible Party	Notes
Annual Report Certification	Agency	Project Engineer/MPM. No later than September 1st

**Non-Compliance.** The Engineer may suspend the Work, as provided in Agency Supplemental General Provisions Section 6-6, at the Contractor’s cost, if the Engineer determines that the Contractor has failed to satisfy all requirements of this Section. If the Contractor violates any provisions of this subsection, or if Water Pollution occurs in the Work Site for any reason, the Contractor shall immediately notify the Engineer.

The Contractor shall also submit a written report to the Engineer describing the incident and corrective actions taken within 24 hours of the occurrence of the incident. If for any reason the Engineer detects Water Pollution before notification by the Contractor, the required written report shall also include an explanation of why the Contractor had not timely notified the Engineer.

**Implementation Costs.** Preparation, implementation and management of Water Pollution prevention activities are incidental to the items of Work and Agency shall not make additional payment to Contractor for these costs.

**Project Completion.** Within 7 Calendar Days of Project completion, the Project-specific SWPPP shall be relinquished to the Agency. In addition, the Contractor shall submit the NOT to the SWRCB. The NOT shall be submitted to the Agency at the same time it is submitted to the SWRCB. The Contractor shall only submit the NOT once the Project has been accepted by the Agency. If the Contractor fails to submit the NOT to the SWRCB, the Contractor shall continue to be responsible for paying the annual fee associated with the “General Permit” until the NOT is submitted and accepted by the SWRCB.

**3-12.6.5 Payment.**

DELETE in its entirety and SUBSTITUTE with the following:

Unless otherwise specified, payment for water pollution control, including implementation and maintenance of BMPs, shall be considered as included in the Contract Unit Price for each item in the Bid.

Payment for dewatering shall be as specified in the Special Provisions.

ADD the following:

**3-12.7 Vermin Control.**

1. The Site and structures constructed under the Contract shall be kept free of rodents, insects, vermin, and pests. Necessary extermination work shall be arranged and paid for by the Contractor as part of the Work within the Contract time and shall be performed by a licensed exterminator in accordance with requirements of governing authorities. The Contractor shall be liable for injury to persons or property and responsible for the elimination of offensive odors resulting from extermination operations.

### 3-13 COMPLETION, ACCEPTANCE, AND WARRANTY.

#### 3-13.1 Completion.

DELETE in its entirety and SUBSTITUTE with the following:

1. The Contractor shall comply with the following prior to requesting a Pre-Final inspection of the Work and filing of a written assertion that the Work has been completed:
  - a. Provide completed and signed redline drawings and record documents including installation, maintenance and operation instructions, manuals and/or tools for installed equipment.
  - b. Provide and properly label all keys for existing facilities or new permanent work.
  - c. Provide all items specified to be supplied as extra stock and spare parts. Wrap, seal, or place in a container all items as necessary to allow for storage by the Agency for future use. Verify the specified quantities.
  - d. Provide all final Special Inspection reports and certifications required by equipment manufacturers to demonstrate compliance with applicable codes and standards.
  - e. Obtain any required certifications from the Engineer of Record for permanent BMPs.
  - f. Comply with all requirements of permits issued by jurisdictional agencies.
  - g. Remove temporary facilities from the Site.
  - h. Thoroughly clean the Site and remove all mark-outs and construction staking.
2. The Agency Inspector will schedule the Pre-Final inspection within 5 Working Days of receipt of the Contractor's request. The Inspector will generate a list of preliminary deficiencies (Punchlist) within 5 Working Days after the Pre-Final inspection.
3. The Contractor shall have 30 Working Days to correct the deficiencies and provide a written response to each Punchlist item. The Inspector will review the corrective work within 5 Working Days of receipt of the Contractor's written response to each Punchlist item. Any outstanding deficiencies will be considered incomplete Work and the Punchlist will be returned to Contractor. Full payment will not be made for any Bid item with outstanding deficiencies and a Final Inspection will not be scheduled until all deficiencies are completed to the satisfaction of the Inspector.
4. The Contractor shall submit a request for Final Inspection which shall include a written assertion that the Work has been completed in accordance with the Contract Documents and a written response describing the corrective Work completed for all punch list items identified in the Pre-Final inspection(s). The request for Final Inspection will not be considered without the Contractor's written response to the punch list items. The Inspector will schedule the Final Inspection within 10 Working Days of receipt of the Contractor's request and invitees will include the Construction Manager, Engineer and representatives from agencies or utility companies having jurisdiction over the Work. The Contractor's attendance is mandatory. Any remaining deficiencies will be addressed in a final punch list sent to the Contractor.
5. If, in the Engineer's judgment, the Work has been completed in accordance with the Contract Documents, the Engineer will set forth in writing the date the Work was completed. This will be the date when the Contractor is relieved from responsibility to protect and maintain the Work, and to which liquidated damages will be computed.

6. The Engineer will not accept the Work or any portion of the Work before all of the Work is completed and all outstanding deficiencies that may exist are corrected by the Contractor and the Engineer is satisfied that all the materials and workmanship, and all other features of the Work, meet the requirements of all specification for the Work. Use, temporary, interim or permanent, of all, or portions of, the Work does not constitute acceptance of the Work.
7. The Contractor must submit a written assertion in the form of Request for Completion Letter, certifying that the Work has been complete. If, in the Engineer's judgment, the Work has been completed in accordance with the Contract Documents, the Engineer will so certify to the Agency's governing body.

ADD the following:

#### 3-13.1.1 Requirements Before Requesting a Walk-through.

1. The following items are required prior to requesting a Walk-through:
  - a. Remove temporary facilities from the Site.
  - b. Thoroughly cleaning the Site and removing all mark outs and construction staking.
  - c. Submit proposed red-line record drawings in accordance with Contract Document requirements.
  - d. Provide all material and equipment maintenance and operation instructions and/or manuals.
  - e. Provide all tools which are a permanent part of the equipment installed in the Project.
  - f. Provide and properly identify all keys for construction and all keys for permanent work.
  - g. Provide all final Special Inspection reports required by the applicable building code.
  - h. Provide all items specified to be supplied as extra stock. Wrap, seal, or place in a container all items as necessary to allow for storage by the Agency for future use. Verify the specified quantities.
  - i. Ensure that all specified equal opportunity (if applicable) and certified wage rate documentations covering the Contract Time have been submitted.
  - j. Provide the spare parts for the proposed irrigation system as specified in the Special Provisions.
2. Contractor shall notify the Engineer to arrange a final inspection of permanent BMPs installed and shall obtain the completed, signed, and stamped DS-563 Form 30 Calendar Days prior to the issuance of the Notice of Completion.

ADD the following:

#### 3-13.1.2 Walk-through and Punchlist Procedure.

1. When Contractor considers that the Work and Services are complete, notify the Engineer in writing that the Project is complete and request that the Contractor and the Engineer perform a Walk-through for the generation of a Punchlist. Contractor shall request the final walkthrough at least 7 Working Days in advance.
2. The Engineer will first determine if the Project is ready for a Walk-through by verifying whether the Contractor have completed all items as required by 3-13.1.1, "Requirements Before Requesting a Walk-through".
3. If the Work includes sewer and storm drain installations, the inspection shall include televising in accordance with the requirements in the Contract Documents.



4. The Engineer shall facilitate the Walk-through.
5. Contractor shall make Plans, specifications, and technical data, such as submittals and equipment manuals, available at the Site for the Walk-through attendees.
6. The Engineer will provide the Contractor with the Punchlist within 15 Working Days after the date of the Walk-through and submit it to the Contractor. The Agency shall not provide a preliminary Punchlist.
7. If the Engineer finds that the Project is not substantially complete as defined in the Contract, the Engineer will terminate the Walk-through and notify the Contractor in writing.
8. If, at any time during the Engineer's evaluation of the corrective Work required by the Punchlist, the Engineer discovers that additional corrective Work is required, the Engineer may include that corrective Work in the Punchlist. Contractor shall remain solely responsible for the Project Site until the Project is completely operational, all Punchlist items have been corrected, and all operation and maintenance manuals have been accepted by the Agency.
9. The Engineer shall meet with the Contractor until all Punchlist items are corrected. If Contractor takes longer than 30 Working Days to complete the corrective Work, the Project shall be subject to re-evaluation.
10. Upon acceptance of the Work, Contractor shall assemble and deliver to the Engineer all records, documents, warranties, material certifications, bonds, guarantees, maintenance and service agreements, and maintenance and operating manuals. Written warranties, except manufacturer's standard printed warranties, shall be on a letterhead addressed to the Contractor. Warranties shall be submitted in the format described in this section, modified as approved by the Agency, to suit the conditions pertaining to the warranty.

### 3-13.2 Acceptance.

DELETE in its entirety and SUBSTITUTE with the following:

1. Acceptance of the Work will occur after all the requirements of the Contract Documents have been fulfilled. If, in the Engineer's judgment, the Contractor has fully performed the Contract, the Engineer will recommend to the City Manager for the City of Carlsbad or Executive Manager for the Carlsbad Municipal Water District that the Contractor's performance of the Contract be accepted. Upon such certification by the Engineer, the City Manager or Executive Manager may accept the Work. Upon the acceptance of the Work by the City Manager or Executive Manager, a "Notice of Completion" will be filed in the office of the San Diego County Recorder. The date of recordation shall be the date of acceptance of the Work.

### 3-13.3 Warranty.

DELETE in its entirety and SUBSTITUTE with the following:

1. Contractor shall warranty and repair all defective materials and workmanship for a period of 1 year. This warranty period shall start on the date the Work was recorded by the "Notice of Completion" unless the Agency has beneficial use of the Project (excluding water, sewer, and storm drain projects). In addition, Contractor shall warranty the Work against all latent and patent defects for a period of 10 years.
2. The warranty period for specific items covered under manufacturer's or supplier's warranties shall commence on the date they are placed into service at the direction of or as approved by the Engineer in writing.

3. All warranties, express or implied, from Subcontractors, manufacturers, or suppliers, of any tier, for the materials furnished and work performed shall be assigned, in writing, to the Agency, and shall be delivered to the Engineer prior to the acceptance of the Contractor's performance of the Contract.
4. Replace or repair defective materials and workmanship in a manner satisfactory to the Engineer after notice to do so from the Engineer and within the time specified in the notice. If Contractor fails to make such replacements or repairs within the time specified in the notice, the Agency may perform the replacement or repairs at Contractor's expense. If Contractor fails to reimburse the Agency for the actual costs, Contractor's Surety shall be liable for the cost.
5. The warranty period shall be extended with respect to portions of the Work corrected under warranty. Items that shall be warrantied free from defective workmanship and materials for a period longer than 1 year are as follows:

<b>Specified Item</b>	<b>Minimum Warranty Period</b>
Detectable Warning Tile Construction	3 Years of Manufacturer's Warranty
All Work Under SECTION 500 – PIPELINE REHABILITATION	3 Years
Fiber Optic Interconnect Cables	2 Years
Luminaires <sup>1</sup>	10 Years of Manufacturer's Warranty
LED Signal Modules	3 Years of Manufacturer's Warranty

<sup>1</sup> Provide documentation verifying that the induction luminaire models being offered for the Project are covered by the 10-year warranty.

6. Contractor shall provide the Agency a copy of the manufacturer's warranty for private sewer pumps, including the alarm panel and all other accessories.
  - a. Contractor shall involve the manufacturer in the installation and startup as needed to secure any extended warranty required.
  - b. This section is not intended to limit any manufacturer's warranty which provides the Agency with greater warranty rights than set forth in this section or the Contract Documents.
  - c. The warranty shall include all components. The form of the warranty shall be approved by the Engineer in accordance with 3-13.3.2, "Warranty Format Requirements."
7. If, during the warranty period, any item of the Work is found to be Defective Work, Contractor shall correct it promptly after receipt of written notice from the Agency to do so. The warranty period shall be extended with respect to portions of the Work corrected as part of the warranty requirements.

ADD the following:

**3-13.3.1 Defective Work.**

1. If the Engineer finds any part of the Work, to be defective or not in compliance with the Contract Documents, the Contractor shall correct the Defective Work in accordance with the Engineer's written instructions and within the specified time limits.
2. The Engineer may order Contractor to stop all or part of the Project if, upon notice, Contractor fails to immediately correct the Defective Work in conformance with the Contract Documents. The Contractor bears all direct and indirect costs and damages that result from the Agency's Stop Work notice.
3. The Engineer may determine in its sole discretion to accept Defective Work instead of having the Contractor correct the Defective Work. However, the Contractor will still be financially responsible for the Defective Work. The Engineer shall issue a deductive Change Order and will incorporate the necessary revisions in the Contract Documents for the Defective Work, the diminished value to the Project, or for the cost to repair the Defective Work.
4. If the Contractor fails to correct Defective Work within the specified time limits, the Engineer may correct the Contractor's Defective Work. The Agency has the right to correct any Defective Work without notice in the event of an emergency. Contractor shall bear all direct and indirect costs of the Defective Work that the Agency corrects.
5. When undertaking remedial action under this section, the Agency may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's Work and or services, and incorporate into the Project all materials and equipment stored at the Site or for which the Agency has paid but Contractor has stored elsewhere.
6. For Building Projects which require a certificate of occupancy, not including sewer and water facilities, if the Contractor fails to correct the Defective Work listed on the Agency's Punchlist within 30 Working Days in accordance with 6-1.1, "Construction Schedule," the Contractor shall reimburse the Agency for all costs to provide inspection services required to monitor the Contractor's Work beyond the 30 Working Days. The Agency shall bill the Contractor for the additional inspection at the Agency's established rates.
7. If the Contractor completes the Project or portions of the Project prior to NOC, the Contractor shall preserve equipment by developing and implementing a preventive maintenance program in compliance with manufacturer's recommendations.

ADD the following:

#### 3-13.3.2 Warranty Format Requirements.

1. Written warranties, except manufacturer's standard printed warranties, shall be on the Contractor's and Contractor's agents', material suppliers', installers', or manufacturers' own letterhead, addressed to and for the Agency's benefit. Submit warranties in the format described in this section, modified as approved by Engineer to suit the conditions pertaining to the warranty.
2. The Contractor shall obtain warranties, executed in triplicate by responsible Subcontractors and Suppliers, within 10 Working Days after completion of the applicable item of Work. Except for items put into use with the Engineer's permission with date mutually agreed upon in writing, ensure that the beginning time of the warranty is the Project completion date.
3. The Contractor shall verify that the documents are in proper form, contain full information, and are notarized.



4. The Contractor shall verify that warranties are signed by both the Contractor and the appropriate party.
5. The Contractor shall provide warranties to the Engineer with a neatly typed table of contents, identifying each warranty with the number and title of the applicable specification section requiring the warranty and the name of the product or work item.
6. The Contractor shall separate each warranty with index tab sheets keyed to the table of contents listing. Provide complete information using separate typed sheets as necessary. The information shall include a list of Subcontractors and Suppliers with the name, address, and telephone number of the responsible principals.

### 3-13.3.3 Long-Term Warranty Contract (LTWC).

1. If specified in the Special Provisions and when a LTWC is included in the Contract Documents, the Contractor shall execute and submit the supplemental agreement for the extended Project warranty (the LTWC covering the workmanship and materials).
2. The first 3 years of warranty protection after installation shall be secured by the faithful performance and payment bonds in accordance with 1-7.2, "Contract Bonds".
3. At the conclusion of the initial 3-year bonded warranty period, an "n"-year subsequent manufacturer's warranty for labor and materials shall commence and run concurrently with the LTWC, where "n" is the number of additional years beyond the initial 3 years as specified in the Special Provisions. Alternatively, and with respect to the 3-year bonded warranty, the Contractor may submit a 2-year bond followed by 1-year bond. If the alternate option is selected, the 1-year bond shall be submitted to the Agency at least 90 Calendar Days before the expiration of the original 2-year bond. Contractor shall clearly inform the Contract Specialist of the option selected. The protection provided shall not be for less than 3 + "n" years continuously.
4. The manufacturer's warranty for parts and labor shall secure performance of the LTWC by the Contractor. Additional security in the form of bonds for both the LTWC and the manufacturer's extended "n"-year warranty (in years 4 and on following Acceptance) for labor and materials may, but is not required to be, provided per the compensation provisions of the LTWC.
5. The manufacturer warranty shall extend to performance of the LTWC by the Contractor, including without limitation the performance of periodic inspections, preparation of periodic reports, and performance of repairs or replacements including parts and labor. If the manufacturer warranty does not expressly extend to the LTWC or is qualified in any way to exclude warranty of the performance of the LTWC by the Contractor, the surety bond shall be provided for the LTWC in accordance with 1-7.2, "Contract Bonds".
6. If the Contractor is unable to obtain a bond which extends the "n"-year term of the LTWC, to obtain a manufacturer warranty or both which clearly and unambiguously extends to secure performance of the LTWC by the Contractor for the "n"- year term, the Agency shall accept either form of security provided that at least 1 of these forms is provided before award.
7. Provision of the manufacturer's warranty, bonds, or both as specified is a pre-condition to award of the Contract.
8. Refer to the LTWC for additional information. The provisions of 3-3, "SUBCONTRACTORS" shall not apply to LTWC.

ADD the following:

### 3-14 PARTNERING.

1. Contractor may request the formation of a formal partnering relationship (Partnering) by submitting a request in writing to the Engineer after approval of the Contract. If Contractor's request for Partnering is approved by the Engineer, scheduling of a Partnering workshop, selecting the Partnering facilitator and workshop, selecting the Partnering facilitator and workshop site, and other administrative details shall be as agreed to by both Parties.
2. The establishment of a Partnering shall not change or modify the terms and conditions of the Contract and shall not relieve either party of the legal requirements of the Contract.
3. The goals of Partnering include the following:
  - a. The Engineer and Contractor's representatives, including Contractor's Subcontractors, actively working together as partners.
  - b. Avoidance of destructive confrontation and litigation among the parties.
  - c. Mutual understanding on how the Work is to be conducted.
  - d. Establishment of mutual key results to facilitate Project success.
  - e. Establishment of an atmosphere of teamwork, trust, and open communication.

#### 3-14.1 Payment.

1. The payment for providing a facilitator and a workshop site shall be borne equally by the Agency and Contractor. Contractor shall pay in advance all compensation for the costs of the facilitator and for the costs of obtaining the workshop site.
2. Unless a Bid item has been provided for "Partnering," the Agency's share of such costs shall be reimbursed to Contractor as Extra Work. Markups shall not be added. Other costs associated with the Partnering relationship shall be borne separately by the party incurring the costs.

ADD the following:

### 3-15 PUBLIC CONVENIENCE.

1. The Contractor shall provide and maintain safe and adequate pedestrian and vehicular access to fire hydrants; hospitals; police and fire stations; commercial and industrial establishments including churches, schools and parking lots; service stations; public transportation; pedestrian crossing; motels and establishments of similar nature. Access shall be continuous and unobstructed unless otherwise approved by the Engineer.
2. The Contractor shall provide access for emergency vehicles and mail delivery and trash collection services. The trash hauling schedule can be obtained by contacting Republic Services at [Customer Support | Republic Services](#).
3. During paving operations, the Contractor shall provide paved parking within 800 feet of the affected residences or businesses unless otherwise approved by the Engineer.
4. The Contractor shall provide notification 72 hours prior to the start of construction in the public right-of-way that affects vehicular traffic, parking, or pedestrian routes. For a full street closure, all residences and/or businesses on the affected street or alley shall be notified. For partial street closures or for curb, sidewalk or driveway repairs, the residences and/or businesses directly affected by the Work shall be notified. The notice shall:

- a. Be written and hand delivered.
  - b. State the date and time the Work will begin and its anticipated duration.
  - c. Provide a brief description of the Work and simple instructions to the home or business owner on actions to facilitate the construction.
  - d. List 2 telephone numbers to obtain additional information. One number shall be the Contractor's permanent office or field office and the other number shall be a 24-hour number answered by someone who is knowledgeable about the Project. An answering machine shall not be connected to either number.
  - e. For residences, be prepared on 65-lb. brightly colored card stock or equivalent durability with contrasting, 12-point font or larger printing; pre-cut in a manner for hanging on a doorknob; and minimum size of 3-1/2 inches wide by 8-1/2 inches long (refer to the appendices for an example).
  - f. Be approved by the Engineer prior to distribution.
5. The Contractor shall post "No Parking" signs 72 hours in advance of the Work. The signs shall state the date and time of parking restriction for a duration not to exceed the time necessary to complete the Work at that location. If the Work is delayed or rescheduled, the signs shall be removed and re-posted 72 hours in advance of the rescheduled Work.
  6. Payment for public convenience shall be considered as included in the Contract Price for each item in the Bid and no additional payment will be made.

ADD the following:

### 3-16 SITE ACTIVITIES BY THE AGENCY OR SEPARATE CONTRACTORS.

#### 3-16.1 The Agency's Right to Award Separate Contracts.

1. The Agency reserves the right to perform work or operations outside the Scope of Work of the Contract related to the Project with Agency Forces, Separate Contractors, or both. If work to be performed by another party was not noted in the Contract, the Agency shall give written notice to Contractor 10 Working Days prior to the start of any Work. If Contractor determines that the work being performed by the Agency or others may interfere with or cause damage to Work being performed by Contractor, notify the Engineer in writing within 3 Working Days of the Engineer's notice.

#### 3-16.2 Integration of the Work with Separate Contractors.

1. When specified in the Contract Documents, prepare a plan to integrate the work performed by Separate Contractors, Agency Forces, or both with the performance of the Work and submit the plan to the Engineer for approval. The plan shall be fair and reasonable for Contractor and the Separate Contractors. Work with Separate Contractors to reach an agreement for the prepared plan. Arrange the performance of the work so that the Work and the work of the Separate Contractors are, to the extent applicable, properly integrated and jointed in a manner that avoids any damage to the Work or to the work of the Separate Contractors.



### 3-16.3 Coordination.

1. Coordinate Contractor's activities and the Schedule with the activities and schedules of the Separate Contractors and make any revisions to the Schedule deemed necessary to avoid any disruption to the Work or to the work of the Separate Contractors.

### 3-16.4 Use of Site.

1. Provide the Agency and the Separate Contractors reasonable opportunities for the storage of materials and equipment and performance of their work. Connect and coordinate work and operations with the work and operations of the Agency and the Separate Contractors as required by the Contract Documents.
2. Coordinate traffic control with the Separate Contractors for other projects and minimize the impact to the community. Prior to the start of construction, submit Contractor's plan for coordination.

### 3-16.5 Deficiency in Work of Separate Contractors.

1. If part of Contractor's Work depends on proper execution or results upon construction or operations by the Agency or a Separate Contractor, prior to proceeding with that portion of the Work, promptly report to the Separate Contractor and the Engineer any apparent discrepancies or defects in construction that would render it unsuitable for proper execution and results. Use good faith efforts to resolve any such discrepancies or defects or any related disagreements. Contractor's failure to report constitutes Contractor's acceptance of the Work of Separate Contractors as fit, proper, and coordinated with the Work.

### 3-16.6 Payment.

1. Payment for reporting deficiencies, coordinating, and resolving discrepancies shall be included in the Contract Price.

## SECTION 4 – CONTROL OF MATERIALS

### 4-2 PROTECTION.

ADD the following:

1. The Contractor shall repair or replace any equipment and materials in the event of vandalism, damage, or theft at no additional cost to the Agency.
2. The Contractor shall be responsible for the protection of public and private property adjacent to the Work and shall exercise due caution to avoid damage to such property.
3. All costs to the Contractor for protecting, removing, and restoring existing improvements shall be included in the Bid.
4. The Agency and affected utility companies have, by a search of known records, endeavored to locate and indicate on the Plans, all utilities which exist within the limits of the Work. However, the accuracy and/or completeness of the nature, size and/or location of utilities indicated on the Plans is not guaranteed.

5. The Contractor shall determine the location and depth of all utilities, including service connections, which have been marked by the respective owners and which may affect or be affected by its operations. If no pay item is provided in the Contract for this Work, full compensation for such Work shall be considered as included in the prices Bid for other items of Work.
6. The Contractor shall not interrupt the service function or disturb the support of any utility without authority from the owner or order from the Agency. All valves, switches, vaults, and meters shall be maintained readily accessible for emergency shutoff.
7. Where protection is required to ensure support of utilities located as shown on the Plans or in accordance with Section 402, the Contractor shall, unless otherwise provided, furnish, and place the necessary protection at its expense.
8. Upon learning of the existence and location of any utility omitted from or shown incorrectly on the Plans, the Contractor shall immediately notify the Engineer in writing. When authorized by the Engineer, support or protection of the utility will be paid for.
9. The Contractor shall immediately notify the Engineer and the utility owner if any utility is disturbed or damaged. The Contractor shall bear the costs of repair or replacement of any utility damaged if located.
10. When placing concrete around or contiguous to any non-metallic utility installation, the Contractor shall at its expense:
  - a. Furnish and install a 2-inch cushion of expansion joint material or other similar resilient material; or
  - b. Provide a sleeve or other opening which will result in a 2-inch minimum-clear annular space between the concrete and the utility; or
  - c. Provide other acceptable means to prevent embedment in or bonding to the concrete.
11. Where concrete is used for backfill or for structures which would result in embedment, or partial embedment, of a metallic utility installation; or where the coating, bedding or other cathodic protection system is exposed or damaged by the Contractor's operations, the Contractor shall notify the Engineer and arrange to secure the advice of the affected utility owner regarding the procedures required to maintain or restore the integrity of the system.
12. Unless otherwise specified, the Contractor shall remove all interfering portions of utilities shown on the Plans or indicated in the Bid documents as "abandoned" or "to be abandoned in place." Before starting removal operations, the Contractor shall ascertain from the Agency whether the abandonment is complete, and the costs involved in the removal and disposal shall be included in the Bid for the items of Work necessitating such removals.
13. When feasible, the owner is responsible for utilities within the area affected by the Work will complete their necessary installations, relocations, repairs, or replacements before commencement of Work by the Contractor. When the Plans or Specifications indicate that a utility installation is to be relocated, altered, or constructed by others, the Agency will conduct all negotiations with the owners and work will be done at no cost to the Contractor, except for manhole frame and cover sets to be brought to grade as provided in the Contract Documents. Utilities which are relocated to avoid interference shall be protected in their position and the cost of such protection shall be included in the Bid for the items of Work necessitating such relocation.

14. After award of the Contract, portions of utilities which are found to interfere with the Work will be relocated, altered, or reconstructed by the owners, or the Engineer may order changes in the Work to avoid interference. Such changes will be paid.
15. When the Plans or Specifications provide for the Contractor to alter, relocate, or reconstruct a utility, all costs for such Work shall be included in the Bid for the items of Work necessitating such Work. Temporary or permanent relocation or alteration of utilities requested by the Contractor for its convenience shall be its responsibility and it shall make all arrangements and bear all costs.
16. The utility owner will relocate service connections as necessary within the limits of the Work or within temporary construction or slope easements. When directed by the Engineer, the Contractor shall arrange for the relocation of service connections as necessary between the meter and property line, or between a meter and the limits of temporary construction or slope easements. The relocation of such service connections will be paid and will include the restoration of all existing improvements which may be affected by the relocation. The Contractor may agree with the owner of any utility to disconnect and reconnect interfering service connections. The Agency will not be involved in any such agreement.
17. Contractor shall coordinate the Work with utility agencies and companies. Prior to the installation of any and all utility structures within the limits of work by any utility agency or company, or its contractor, the Contractor shall place all curb or curb and gutter that is a part of the Work and adjacent to the location where such utility structures are shown on the Plans and are noted as being located, relocated or are otherwise shown as installed by others. In order to minimize delays to the Contractor caused by the failure of other parties to relocate utilities that interfere with the construction, the Contractor, upon the Engineer's approval, may be permitted to temporarily omit the portion of Work affected by the utility. If such temporary omission is approved by the Engineer, the Contractor shall place survey or other physical control markers sufficient to locate the curb or curb and gutter to the satisfaction of the utility agency or company. Such temporary omission shall be for the Contractor's convenience and no additional compensation will be allowed therefore or for additional work, materials or delay associated with the temporary omission. The portion thus omitted shall be constructed by the Contractor immediately following the relocation of the utility involved unless otherwise directed by the Engineer.
18. The Contractor shall notify the Engineer of its Construction Schedule insofar as it affects the protection, removal, or relocation of utilities. The notification shall be included as a part of the Construction Schedule. The Contractor shall notify the Engineer in writing of any subsequent changes in the Construction Schedule which will affect the time available for protection, removal, or relocation of utilities.
19. The Contractor will not be entitled to damages or additional payment for delays attributable to utility relocations or alterations if correctly located, noted, and completed.
20. The Contractor may be given an extension of time for unforeseen delays attributable to unreasonably protracted interference by utilities in performing the Work correctly shown on the Plans.
21. The Agency will assume responsibility for the timely removal, relocation, or protection of existing main or trunkline utility facilities within the area affected by the Work if such utilities are not identified in the Contract Documents. The Contractor will not be assessed liquidated



damages for any delay caused by failure of Agency to provide for the timely removal, relocation, or protection of such existing facilities.

22. The Contractor will be compensated for damages incurred due to delays for which the Agency is responsible or for delays attributable to interferences, relocations, or alterations not covered by the Contract Documents. These damages for delay will be determined by the Engineer. The Agency shall not be liable for damages which could have been avoided by the judicious handling of forces, equipment, or plant. These avoidable damages will be determined by the Engineer. The Engineer may grant Contractor an extension of time for damages due to delay.
23. When necessary, the Contractor shall so conduct its operations as to permit access to the Work Site and provide time for utility work to be accomplished during the progress of the Work.

#### 4-3 INSPECTION.

##### 4-3.1 General

ADD the following:

1. All costs of inspection at the source, including salaries and mileage costs, shall be paid by the Contractor.
2. Materials typically accepted by Certificate of Compliance shall not require inspection at the source unless specified in the Contract Documents. For a list of these items or materials, Contractor may refer to the Summary of Work.
3. Location changes to the source of materials requiring inspection without the required 24-hour notification may result in non-compliant material subject to rejection. Contractor shall be responsible for staff charges resulting from last minute changes or cancellations once staff has been deployed. The Engineer shall issue a deductive Field Order for a minimum of 2 hours of staff time to reimburse the Agency for misdirected staff charges. The Contractor shall be notified in writing of the additional staff charges incurred.
4. Steel pipe in sizes larger than 18 inches shall require inspection at the source of production.
5. Agency staff or a qualified inspection agency approved by the Engineer shall witness all welding, lining, coating, and testing. Contractor shall incur additional inspection costs outlined in 4-2.3, "Inspection of Items Not Locally Produced".
6. All parts of production (including but not limited to product fabrication, welding, testing, lining, and coating of straight pieces and specials) shall be performed or produced in the United States.
7. Welding and all testing shall be performed by certified welders and testing staff with credentials traceable in the United States.
8. The Contractor shall provide the Engineer free and safe access to any and all parts of Work at any time. Such free and safe access shall include means of safe access and egress, ventilation, lighting, shoring, dewatering and all elements pertaining to the safety of persons as contained in the California Code of Regulations, Title 8, Industrial Relations, Chapter 4, Division of Industrial Safety, Subchapter 4, Construction Safety Orders and such other safety regulations as may apply. Contractor shall furnish Engineer with such information as may be necessary to keep the Engineer fully informed regarding progress and manner of work and character of

materials. Inspection or testing of the whole or any portion of the Work or materials incorporated in the Work shall not relieve Contractor from any obligation to fulfill this Contract.

#### 4-3.2 Inspection by the Agency.

DELETE this section in its entirety and replace with the following:

Inspection and testing laboratory services shall be proposed by the Contractor and subject to the approval of the engineer.

#### 4-3.3 Inspection of Items Not Locally Produced.

ADD the following:

1. The Engineer may elect Agency staff or Consultants to perform inspection of an out-of-town manufacturers. The Contractor shall incur additional inspection costs of the Engineer including lodging, meals, and incidental expenses based on Federal Per Diem Rates, along with travel and car rental expenses. If the manufacturing plant operates a double shift, a double shift shall be figured in the inspection costs.
  - a. At the option of the Engineer, full time inspection shall continue for the length of the manufacturing period. If the manufacturing period will exceed 3 consecutive weeks, Contractor shall incur additional inspection expenses of the Engineer's supervisor for a trip of 2 Working Days to the site per month.
  - b. When the Engineer elects Agency staff or Consultants to perform out-of-town inspections, the wages of staff employed by the Agency shall not be part of the additional inspection expenses paid by Contractor.
  - c. Federal Per Diem Rates can be determined at the location below:  
<https://www.gsa.gov/portal/content/104877>.
2. Specialty Testing of Foreign Materials.
  - a. Materials that are manufactured, produced, or fabricated outside of the United States shall be delivered to a distribution point in California, unless otherwise specified. Quality Control and related testing shall be performed to all applicable specified US standards. Manufacturer's testing and staff certification shall be traceable to a United States regulatory agency. Retain the materials for a sufficient period of time to permit inspection, sampling, and testing. The Contractor shall not be entitled to an extension of time for acts or events occurring outside of, at point of entry, or during transport to the United States, unless the extension is acceptable to the Engineer.

ADD the following:

#### 4-3.4 Specialty Inspection Paid for by the Contractor.

1. Contractor shall employ and pay for the services of a qualified inspection agency to perform specialty inspection services as required by the Contract Documents.
2. The payment for the specialty inspection service Work shall be included under the Bid item for "Specialty Inspection Paid for By the Contractor".
3. When an Allowance Bid item for "Specialty Testing Under the Direction of the Engineer" is provided, Contractor shall employ and pay for the services of a qualified third party

independent laboratory to perform the required testing. Contractor shall be reimbursed for the cost of testing under this Bid item.

4. The cost for specialty inspections shall be included in the Contractor's bid price for the item requiring the specialty inspection.

#### 4-4 TESTING.

ADD the following:

1. Except as specified in these Special Provisions, the Agency will bear the cost of testing of locally produced materials and/or on-site workmanship where the results of such tests meet or exceed the requirements indicated in the Standard Specifications, Technical Specification, and any Supplemental Provisions. The cost of all other tests shall be borne by the Contractor.
2. At the option of the Engineer, the source of supply of each of the materials shall be approved by the Engineer before the delivery is started. All materials proposed for use may be inspected or tested at any time during their preparation and use. If, after incorporating such materials into the Work, it is found that sources of supply that have been approved do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved material from other approved sources. If any product proves unacceptable after improper storage, handling or for any other reason it shall be rejected, not incorporated into the Work and shall be removed from the Project Site all at the Contractor's expense.
3. Compaction tests may be made by the Engineer and all costs for tests that meet or exceed the requirements of the specifications shall be borne by the Agency. The tests may be made at any place along the Work as deemed necessary by the Engineer. The costs of any retests made necessary by noncompliance with the specifications shall be borne by the Contractor.

#### 4-6 TRADE NAMES.

ADD the following:

1. Whenever materials or equipment are indicated in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function, and quality required.
2. Unless stated otherwise, materials or equipment of other suppliers may be accepted if sufficient information is submitted to the Engineer for review to determine whether the material or equipment proposed is equivalent or equal to that named.
3. For reviews prior to Bid:
  - a. The Engineer shall respond to Contractor's substitution proposal by the last date for issuing an Addendum for the Contract. If the Engineer fails to respond to Contractor's substitution proposal before the Bid due date, the substitution proposal shall be deemed denied.
  - b. Contractor may bring forward a substitution proposal after Award that was denied based on the Engineer's failure to respond by submitting a Cost Reduction Proposal in accordance with 2-6.1, "Cost Reduction Proposal".
4. Include the following information in the request for substitution:
  - a. Whether or not acceptance of the substitute for use in the Work shall require a change in any of the Contract Documents to adopt the design to the proposed substitute.



- b. Whether or not incorporation or use of the substitute in connection with the Work is subject to the payment of any license fee or royalty.
  - c. All variations of the proposed substitute from the items originally specified shall be identified.
  - d. Available maintenance, repair, and replacement service requirements. The manufacturer shall have a local service agency within 50 miles (80.5 km) of the Site which maintains properly trained personnel and adequate spare parts and is able to respond and complete repairs within 24 hours.
  - e. Certifications from the manufacturer or service provider that the proposed substitute shall perform the intended function adequately under the expected service conditions, achieve the results called for by the general design, and be similar and of equal substance to that indicated.
5. There is no guaranteed time frame for the Engineer's review of the substitution requests. Any lack of action on the Engineer's side within Contractor's requested time does not constitute acceptance of the substitution.
  6. If, in the opinion of the Engineer, substitute items are determined to be unsatisfactory in performance, appearance, durability, compatibility with existing equipment or systems, availability of repair parts and suitability of application, the Contractor shall remove the substituted item and replace it with the originally specified item at no cost to the Agency.
  7. The burden of proof as to the type, function, and quality of any such substitute product, material or equipment shall be upon Contractor. The Engineer may require at Contractor's expense additional data about the proposed substitute.
  8. Acceptance by the Engineer of a substitute item does not relieve Contractor of the responsibility for full compliance with the Contract Documents. If the Engineer takes no exceptions to the proposed substitution, it shall not relieve Contractor from Contractor's responsibility to the efficiency, sufficiency, quality, and performance of the substitute material or equipment in the same manner and degree as the material and equipment specified by name.
  9. The Bid submittal shall be based on the material and equipment specified by name in the Contract. If the proposal is rejected by the Engineer, Contractor shall not be entitled to either an extension in Contract Time, an increase in the Contract Price, or both.
  10. As applicable, no Shop Drawing or Working Drawing submittals shall be made for a substitute item nor shall any substitute item be ordered, installed, or utilized without the Engineer's prior written approval.
  11. The Contractor is responsible for the satisfactory performance of substituted items. If, in the sole opinion of the Engineer, the substitution is determined to be unsatisfactory in performance, appearance, durability, compatibility with associated items, availability of repair parts and suitability of application the Contractor shall remove the substituted item and replace it with the originally specified item at no cost to the Agency.

#### 4-7 WEIGHING AND METERING EQUIPMENT.

REPLACE the first paragraph with the following:

All scales and metering equipment used for proportioning materials shall be inspected for accuracy and certified within the past 12 months by the State of California Bureau of Weights

and Measures, by the County Director or Sealer of Weights and Measures, or by a scale mechanic registered with or licensed by the County.

## SECTION 5 – LEGAL RELATIONS AND RESPONSIBILITIES

### 5-1 LAWS AND REGULATIONS

ADD the following:

1. Each worker shall be paid subsistence and travel as required by the collective bargaining agreement on file with the State of California Department of Industrial Relations.
2. Municipal ordinances that affect this Work include Chapter 11.06. Excavation and Grading. If this notice specifies locations or possible materials, such as borrow pits or gravel beds, for use in the proposed construction Project which would be subject to Fish and Game Code Section 1601 or 1603, the conditions established in Fish and Game Code Section 1601 *et seq.* shall become conditions of the Contract.

### 5-3.3 Payroll Records.

ADD the following:

1. The Contractor and its Subcontractors shall maintain and furnish to the Agency, at a designated time, a certified copy of each weekly payroll reflecting the wages containing all of Contractor's and Subcontractors' employees engaged in the Work and a statement of compliance signed under penalty of perjury.

### 5-3.4 Hours of Labor.

ADD the following:

1. Unless otherwise approved in writing by the Engineer, the hours of work shall be between the hours of 7:00 AM and 4:00 PM on Mondays through Fridays, excluding Agency holidays. The Contractor shall obtain the written approval of the Engineer if the Contractor desires to work outside these hours or at any time during weekends and/or holidays. This written permission must be obtained at least 48 hours prior to such work. The Engineer may approve work outside the stated hours and/or days when, in his/her sole opinion, such work conducted by the Contractor is beneficial to the best interests of the Agency. The Contractor shall pay the inspection costs of such work.

### 5-4 INSURANCE.

#### 5-4.1 General.

ADD the following:

1. Contractor shall procure and maintain for the duration of the Contract insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the Work by the Contractor, his or her agents, representatives, employees or Subcontractors. The insurance shall meet the City's policy for insurance as stated in City Council Policy No. 70.

- a. **Coverages and Limits:** Contractor shall maintain the types of coverages and minimum limits specified in these Agency Supplemental General Provisions (00 73 00):
- b. **Additional Provisions:** Contractor shall ensure that the policies of insurance required under this Contract with the exception of Workers' Compensation and Business Automobile Liability Insurance contain, or are endorsed to contain, the following provisions.
  - i. The Agency, its officials, employees and volunteers must be covered as additional insured as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Agency, its officials, employees or volunteers. All additional insured endorsements must be evidenced using separate documents attached to the certificate of insurance; 1 for each company affording general liability, and employers' liability coverage.
  - ii. The Contractor's insurance coverage shall be primary insurance as respects the Agency, its officials, employees and volunteers. Any insurance or self-insurance maintained by the Agency, its officials, employees or volunteers shall be in excess of the Contractor's insurance and shall not contribute with it.
  - iii. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Agency, its officials, employees or volunteers.
  - iv. Coverage shall state that the Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
- c. **Notice of Cancellation.** Each insurance policy required by this Contract shall be endorsed to state that coverage shall not be nonrenewed, suspended, voided, canceled, or reduced in coverage or limits except after 10 Calendar Days' prior written notice has been sent to the Agency by certified mail, return receipt requested.
- d. **Deductibles and Self-Insured Retention (S.I.R.) Levels.** Any deductibles or self-insured retention levels must be declared to and approved by the Agency. At the option of the Agency, either: the insurer shall reduce or eliminate such deductibles or self-insured retention levels as respects the Agency, its officials and employees; or the Contractor shall procure a bond guaranteeing payment of losses and related investigation, claim administration and defense expenses.
- e. **Waiver of Subrogation.** All policies of insurance required under this Contract shall contain a waiver of all rights of subrogation the insurer may have or may acquire against the Agency or any of its officials or employees.
- f. **Subcontractors.** Contractor shall include all Subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each Subcontractor. Coverages for Subcontractors shall be subject to all of the requirements stated in these Agency Supplemental General Provisions (00 73 00).
- g. **Acceptability of Insurers.** Insurance must be placed with insurers that have a rating in Best's Key Rating Guide of at least A-:VII. Insurers must also be authorized to transact the business of insurance by the State of California Insurance Commissioner as admitted carriers as evidenced by a listing in the official publication of the Department of Insurance



of the State of California and/or under the standards specified by City Council Policy No. 70.

- h. **Verification of Coverage.** Contractor shall furnish the Agency with certificates of insurance and original endorsements affecting coverage required by this clause. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements are to be in forms approved by the Agency and are to be received and approved by the Agency before the Contract is executed by the Agency.
- i. **Coverage and Limits.** Contractor will maintain the types of coverage and minimum limits indicated below unless the Risk Manager or City Manager or Executive Manager approves a lower amount. These minimum amounts of coverage will not constitute any limitations or cap on Contractor's indemnification obligations under this Contract. Agency, its officers, agents, and employees make no representation that the limits of the insurance specified to be carried by Contractor pursuant to this Contract are adequate to protect Contractor. If Contractor believes that any required insurance coverage is inadequate, Contractor will obtain such additional insurance coverage, as Contractor deems adequate, at Contractor's sole expense. The full limits available to the named insured shall also be available and applicable to the Agency as an additional insured.
- j. **Cost of Insurance.** The Cost of all insurance required under this Contract shall be included in the Contractor's Bid.

#### 5-4.2 General Liability Insurance.

ADD the following:

**Commercial General Liability (CGL) Insurance:** Insurance written on an "occurrence" basis, including products-completed operations, personal & advertising injury, with limits no less than \$2,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.

#### 5-4.3 Worker's Compensation Insurance.

ADD the following:

**Workers' Compensation and Employers' Liability Insurance:** Workers' compensation limits as required by the Labor Code and Employers' Liability limits of \$1,000,000 per incident. Workers' compensation offered by the State Compensation Insurance Fund is acceptable to the City.

#### 5-4.4 Auto Liability Insurance.

ADD the following:

**Business Automobile Liability Insurance:** \$2,000,000 combined single limit per accident for bodily injury and property damage. In addition, the auto policy must cover any vehicle used in the performance of the Contract, used onsite or offsite, whether owned, non-owned or hired, and whether scheduled or non-scheduled.

#### 5-6 PATENTS FEES AND ROYALTIES.

DELETE in its entirety and SUBSTITUTE with the following:

1. Contractor shall pay, at no additional cost to the Agency, all applicable royalties and license fees arising from the Work. Contractor shall indemnify and defend all claims and lawsuits for infringement of patent, trademark, and copyright against the Agency and shall hold the Agency harmless from any loss.

## 5-7 SAFETY.

### 5-7.1.1 General.

ADD the following:

1. When conducting grading or excavation, place Contractor's name and emergency telephone number adjacent to the Work at intervals and locations approved by the Engineer. The method of posting shall be approved by the Engineer.
2. The Contractor shall respond and initiate corrective action in accordance with OSHA and within 24 hours of the notice of the nonconforming Work that poses an imminent threat to person or property.
3. The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for the protection of workers and public and shall use danger signs warning against hazards created by such features of construction as protruding nails, hoists, well holes, and falling materials.

ADD the following:

### 5-7.1.3 Health and Safety Plan (HSP).

1. The Contractor is ultimately responsible for the health and safety of Contractor's employees. These specifications shall not be construed to limit Contractor's liability nor to assume that the Agency, its employees, or designees shall assume any of Contractor's liability associated with Site safety considerations.
2. Contractor shall have a HSP in effect at least 1 week prior to the commencement of the Work. The HSP shall comply with all OSHA and other applicable requirements.
3. The HSP shall specifically address procedures and protocols that shall be followed to monitor for or respond to the presence of hazardous atmosphere, possibility for engulfment, gasses due to organic soils or proximity to landfills, exposure to hazardous products such as may be released when grinding, cutting, or torching galvanized or painted surfaces or asbestos containing materials, contaminated soil, and groundwater. Identify response actions that shall be taken when these conditions are encountered.
4. The Agency shall not assume any role in determining the adequacy of the HSP on Contractor's behalf.

### 5-7.3 Use of Explosives.

ADD the following:

1. Explosives may be used only when authorized in writing by the Engineer. The Contractor shall prepare and submit an application for blasting permit to the City of Carlsbad Engineering Department and comply with the City's blasting policy.

## 5-7.7 Security and Protective Devices.

### 5-7.7.1 General.

DELETE in its entirety and SUBSTITUTE with the following:

1. Security and protective devices shall consist of fencing, railing, steel plates, or other devices for the protection of workers or the public from hazards posed by open excavations or any work in progress. Security and protective devices shall remain in place until the Work is accepted.
2. Unless otherwise specified, no separate or additional payment will be made for security and protective devices. Payment shall be included in the Contract price for the various Bid items requiring such devices.

ADD the following:

### 5-7.7.3 Playground Safety.

1. Provide a secured fence around the playground to prevent use or access. Do not remove the fence until the independent Playground Safety Audit has been done by the Contractor and the Engineer, the Engineer has accepted the playground design and installation, and the Punchlist items have been completed.
2. Provide certification by a NPSI certified playground inspector that confirms that the installed equipment is compliant with all applicable codes.
3. The payment for the fencing around the playground and the playground safety audit is included in the Contract Price.

### 5-7.7.2 Security Fencing.

1. The payment for security fencing Work for open excavations shall be included in the Contract Price.

## 5-7.8 Steel Plate Covers

### 5-7.8.1 General.

ADD the following:

1. The Contractor shall protect transverse or longitudinal cuts, voids, trenches, holes, and excavations in the right-of-way that cannot be properly completed within 1 Working Day by adequately designed barricades and structural steel plates (plates) that shall support legal vehicle loads in such a way as to preserve unobstructed traffic flow.
2. For trench widths exceeding those in Table 5-7.8.2, a structural design shall be prepared by a California registered civil or structural engineer regularly engaged in the design of shoring systems.
3. The Contractor shall secure approval in advance from authorities concerning the use of any bridging proposed on the Work.
4. The Contractor shall shore the trench adequately to support the bridging and traffic loads.
5. The Contractor shall design plates for HS 20-44 truck loading in accordance with Caltrans Bridge Design Specifications Manual and evaluate soil conditions and ensure that the plate extends enough beyond the trench walls to support traffic loads.



6. The Contractor shall use the plates skid-resistant with a nominal COF of 0.35 as determined by California Test Method 342. If a different test method is used, the Contractor may utilize standard test plates with known coefficients of friction available from each Caltrans District Materials Engineer to correlate skid resistance results to California Test Method 342.
7. Plates shall provide complete coverage to prevent any person, bicycle, motorcycle, or motor vehicle from being endangered due to plate movement causing separations or gaps.
8. Alternative installation methods may be submitted in accordance with 3-8, "SUBMITTALS" for the Engineer's approval.
9. Contractor shall install signage and postings with a 2 inch (50.8 mm) minimum letter height indicating the steel plate cover load limit, the Company's name, and a 24-hour emergency contact phone number. See 601-1, "GENERAL".
10. Contractor is responsible for the maintenance of the plates, shoring, and asphalt concrete ramps or any other approved device used to secure the plates. Contractor shall immediately mobilize necessary personnel and equipment after being notified by the Engineer, the Agency, or a member of the public of a repair needed for such items as plate movements, noise, anchors, and asphalt ramps. Failure to respond to the emergency request within 2 hours shall be grounds for the Agency to perform necessary repairs that shall be invoiced at the actual cost including overhead or \$500 per incident, whichever is greater. Failure may also result in a "Stop Work" notice.
11. When plates are removed, Contractor shall repair any damage to the pavement with fine graded asphalt concrete mix or slurry seal satisfactory to the Engineer.

#### 5-7.8.3 Installation.

ADD the following:

The pavement shall be cold planed to a depth equal to the thickness of the plate and to a width and length equal to the dimensions of the plate. The cold milling shall produce a flat surface that the plate shall rest on with no horizontal or vertical movement. Horizontal gaps between the unmilled pavement and the plate shall not exceed 25 mm (1 ") and shall be filled with elastomeric sealant material which may, at the contractor's option, be mixed with no more that 50%, by volume, of Type I aggregate conforming to the requirements of tables 203-5.2 and 203-5.3.

DELETE method 2 in its entirety. Only method 1 is acceptable within city streets.

ADD the following:

#### 5-8 INDEMNIFICATION AND HOLD HARMLESS AGREEMENT.

1. Contractor agrees to defend, indemnify, and hold harmless Agency, its affiliated and subsidiary entities, and its elected and appointed officials, officers, directors, managers, employees and agents ("Indemnified Parties") from and against all claims asserted, liability established, or judgments for damages or injuries to any person or property, including to Contractor's officers, employees, agents, or subcontractors, arising directly or indirectly out of the Work, which arise from, are connected with, or are caused or claimed to be caused by the acts or omissions of Contractor, its officers, employees, agents or subcontractors. Contractor's duty to defend, indemnify, and hold harmless shall not include any claims or

liabilities arising from the sole negligence or sole willful misconduct of the Indemnified Parties.

2. Contractor further agrees that its duty to defend includes all attorney fees and costs associated with enforcement of this indemnification provision, defense of any claims arising from this Contract, and, where a conflict of interest exists or may exist between Contractor and Agency, the reasonable value of attorney fees and costs if Agency chooses, at its own election, to conduct its own defense or participate in its own defense of any claim related to this Contract.
3. Contractor shall also defend and indemnify the Indemnified Parties against any challenges to the Award of the Contract to Contractor, and Contractor will pay all costs, including defense costs for the Agency. Defense costs include the cost of separate counsel for the Indemnified Parties, if the Indemnified Parties request separate counsel.
4. Contractor shall also defend and indemnify the Indemnified Parties against any challenges to the Award of the Contract to Contractor, arising in whole or in part from alleged inaccuracies or misrepresentation by the Contractor, whether intentional or otherwise, and Contractor will pay all costs, including defense costs for the Agency. Defense costs include the cost of separate counsel for the Indemnified Parties, if the Indemnified Parties request separate counsel.
5. Contractor shall defend, indemnify, protect and hold the Indemnified Parties harmless from and against any dispute between Contractor and Contractor's Subcontractors if the Indemnified Parties are made a party to any judicial or administrative proceeding.

ADD the following:

5-9 CONFLICT OF INTEREST.

1. Establish and make known to Contractor's employees appropriate safeguards to prohibit employees from using their positions for a purpose that is or gives the appearance of being motivated by desire for private gain for themselves or others and particularly those with whom they have family, business, or other relationships. Project personnel shall not accept gratuities or any other favors from Subcontractors or potential Subcontractors.
2. Contractor is subject to all federal, state, and local conflict of interest laws, regulations, and policies applicable to public contracts and procurement practices (Government Code Sections 1090 *et. seq.* and 81000 *et. seq.*, the Agency's Ordinances, and the City of Carlsbad Municipal Code). If, in performing the Work, Contractor makes or participates in a "governmental decision" in accordance with Title 2, Section 18701, subdivision (a)(2) of the California Code of Regulations, or performs the same or substantially all the same duties for Agency that would otherwise be performed by an Agency employee holding a position specified in the Agency's conflict of interest code, Contractor shall be subject to a conflict of interest code requiring the completion of 1 or more statements of economic interests disclosing Contractor's relevant financial interests.
3. Statements of economic interests shall be made on Fair Political Practices Commission Form 700 and filed with the City of Carlsbad's City Clerk. Contractor shall file a Form 700 (Assuming Office Statement) within 30 Calendar Days of the Agency's written determination that Contractor shall be subject to a conflict of interest code and file a Form 700 (Annual

Statement) on or before April 1st disclosing any financial interests held during the previous calendar year for which Contractor was subject to a conflict of interest code.

4. If the Agency requires Contractor to file a statement of economic interests as a result of the Work performed, Contractor shall be considered an "Agency Official" for conflict of interest purposes, including the prohibition against lobbying the Agency for 1 year following the expiration or termination of the Contract.
5. Contractor's personnel employed on the Project shall not accept gratuities or any other favors from any Subcontractors or potential Subcontractors. Contractor shall not recommend or specify any product, supplier, or other Contractor with whom Contractor has a direct or indirect financial or organizational interest or relationship that would violate conflict of interest laws, regulations, or policies.
6. If Contractor violates any conflict of interest laws or any of these conflict of interest provisions, the violation shall be grounds for immediate termination of this Contract. Further, the violation subjects Contractor to liability to the Agency for all damages sustained as a result of the violation.

ADD the following:

#### 5-10 STATUTORY REFERENCES.

1. All references in these Agency Supplemental General Provisions (00 73 00) to any statute, rule or regulation are to the statute, rule or regulation as amended, modified, supplemented, or replaced from time to time by the corresponding legislative or regulatory body.

ADD the following:

#### 5-11 RIGHT TO AUDIT.

##### 5-11.1 General.

1. The Agency retains the right to review, audit, reasonably access Contractor's and all Contractor's Subcontractor's premises to review and audit Contractor's compliance with the provisions of the Contract. This includes the right to inspect, photocopy, and retain copies, outside of Contractor's premises, of all records with appropriate safeguards if such retention is deemed necessary by the Agency in its sole discretion. The Agency will keep this information in strictest confidence.
2. Contractor shall include the Agency's right to audit in its subcontracts and ensure that these specifications are binding upon all Subcontractors.

##### 5-11.2 Audit.

1. The right to audit includes the right to examine any and all books, records, documents, and any other evidence of procedures and practices that the Agency determines is necessary to discover and verify that Contractor are in compliance with all requirements under the Contract.
2. If there is a claim for additional compensation or for changes in Work, the right to audit also includes the right to verify all direct and indirect costs which are claimed to have been incurred, anticipated to be incurred, or for which a claim for additional compensation or for changes in the Work have been submitted.



3. Contractor shall maintain complete and accurate records in accordance with generally accepted accounting practices in the construction industry. Contractor shall also make available to the Engineer for review and audit all Project-related accounting records and documents and any other financial data. Upon the Engineer's request, Contractor shall submit exact duplicates of originals of all requested records to the Engineer.

#### 5-11.3 Compliance Required Before Mediation and Litigation.

1. As a condition precedent to proceeding with mandatory mediation and further litigation under 2-10.2, "Dispute Resolution Process" Contractor shall comply with the audit specifications within 60 Calendar Days of the Engineer's notice to review and audit compliance. See 5-2, "SPECIAL NOTICES".

#### 5-11.4 Access to Records on Federally Funded Projects.

1. Contractor shall retain all records, books, papers, and documents directly pertinent to the Contract for a minimum of 5 years after the Agency makes final payments and all other pending matters are closed and shall allow access to those records to the Agency, the Federal grantor agency, the Comptroller General of the United States, or any duly authorized representatives.

## SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK

### 6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK.

ADD the following:

1. A Payment for the Construction Schedule shall be included in the Contract Price and no separate payment will be made, therefore.
2. The Contractor shall incorporate the dates, areas and types of work prohibited in this section in the Construction Schedule. No additional payment, adjustment of bid prices or adjustment of contract time of completion will be allowed as a consequence of the prohibition of work being performed within the dates, areas and/or types of work prohibited in this section.

ADD the following subsection:

#### 6-1.2 Pre-Construction Meeting.

1. After notification of Contract award, the Engineer will schedule the Preconstruction Meeting. Attendance of the Contractor's personnel responsible for the management, administration, and execution of the project is mandatory. Failure of the Contractor to have the Contractor's responsible project personnel attend the Preconstruction Meeting will be grounds for default by Contractor per Section 6-7. The Notice to Proceed will only be issued on or after the completion of the Preconstruction Meeting. No separate payment will be made for the Contractor's attendance at the meeting.
2. The Notice to Proceed will only be issued on or after the completion of the Preconstruction Meeting and Contractor complies with the Baseline Construction Schedule conditions per Section 01 33 00.

ADD the following subsection:

#### 6-1.3.1 Baseline Construction Schedule.

Prior to the start of any work, the Contractor shall submit its Baseline Construction Schedule to the Engineer for approval and shall present the schedule at the Preconstruction Meeting. The Contractor shall prepare the schedule as a Critical Path Method (CPM) schedule in the precedence diagram method (activity-on-node) format and submit the schedule in accordance with 3-8. The schedule shall:

1. Be prepared using commercially available, Windows compatible scheduling software program such as, Primavera, Microsoft Project, or approved equal.
2. Be prepared in hard copy (paper) and electronic (Adobe PDF) format and free of file locking, encryption or any other protocol that would impede full access to the data. Identify the project name and number, the Contractor's name and the date of preparation or revision.
3. Begin with the date of the Notice to Proceed and conclude with the date of final completion conforming with the Contract time.
4. Depict a time-scaled network diagram of all activities, logic relationships of interdependent activities, and milestones comprising the complete period of Work with tasks on the vertical axis and their durations on the horizontal axis. Use distinctive texture patterns or line types to show the critical path within the Contract time. Include a tabular listing of each activity and its identification number, description, duration, early start, early finish, late start, late finish, total float, and all predecessor and successor activities. The number of activities will communicate the Contractor's plan for project execution, accurately describe the project work and allow monitoring and evaluation of progress and time impacts. Activity descriptions shall accurately define the work planned for the activity. Activity durations shall not be shorter than 1 working day or longer than 15 working days unless approved by the Engineer.
5. Include detail of all project phasing including all milestones necessary to define the beginning and end of each phase and constraints which may impact any activity. Include time allowances for coordination with utility companies and other agencies, pre-construction surveys and investigations, equipment and material deliveries, submittal reviews and approvals, traffic control setup and phasing, Work performed by others, inspections, testing and commissioning, corrective work, and any non-work periods.

Float or slack time within the schedule is available without charge or compensation to the party or contingency that first exhausts it. A schedule which shows a project duration longer than the Contract time will not be accepted by the Engineer.

If the Baseline Construction Schedule does not meet the requirements of these specifications, the Contractor shall revise the schedule and resubmit it to the Engineer. Failure to obtain the Engineer's approval of the schedule within twenty five (25) Working Days after the date of the Preconstruction Meeting shall be grounds to consider the Contractor in default of the Contract per 6-7. The time required by the Engineer to review the initial Baseline Construction Schedule submittal will not be included in the 25 Working Days. The Engineer shall complete subsequent reviews of the revised schedule and progress updates within 5 working days of receipt.

The Contractor shall not be permitted to commence any excavation or demolition activities until the Engineer accepts the Baseline Construction Schedule. For each day of delay beyond the 25 Working Days after the Preconstruction Meeting that the Baseline Construction Schedule is not accepted by the Engineer, the Contractor shall be charged \$100 through a deductive Change Order.

The Engineer's response to each review will consist of one of the following:

- "Accepted." The Contractor may proceed with the Work.
- "Accepted with Comments." The Contractor may proceed with the Work but must revise and resubmit the schedule prior to submittal of the first progress payment application. The Engineer's acceptance of the schedule is a condition precedent to payment of any progress payment.
- "Not Accepted." The Contractor may not proceed with the Work and must revise and resubmit the schedule.

ADD the following subsection:

**6-1.3.2 Schedule Updates and Revisions.** The Contractor shall meet with the Agency's Construction Manager during the last week of each month to agree upon the completion level of each activity as a basis for progress payments. Schedule updates shall conform with the requirements for the initial submittal in 6-1.1.1 and shall:

1. Show the actual dates of each activity start and/or finish during the month. The schedule update shall include specific notation for any changes in actual dates after they are first reported.
2. Report the percent complete for each activity in progress at the end of the month as determined by the Engineer.
3. Include a list and explanation of all changes made to the activities, dates or interconnecting logic.
4. Include activity and network revisions reflecting the Change Orders approved in the previous month.

The Engineer's responses to the construction schedule updates shall be as described in 6-1.1.1.

If the Contractor fails to submit schedule updates as required herein, the Contractor may elect to proceed with the Work at its own risk and shall forfeit the progress payment for Work completed until compliance is met. If the Contractor elects to delay or cease Work after failure to submit the schedule updates, any resulting delay, impact, or disruption to the Work will be the Contractor's responsibility.

Should the actual or projected progress of the Work exceed 5 percent of the Contract time, the Contractor shall prepare and submit a revised Baseline Construction Schedule independently of and prior to the next progress schedule update. The Contractor shall provide an explanation for each change made to the schedule.



If the Contractor desires to make a major change in the method of operations after commencing construction, the Contractor shall submit to the Engineer a revised Baseline Construction Schedule in advance of beginning revised operations.

ADD the following subsection:

**6-1.3.3 Late Completion or Milestone Dates.** If a schedule update indicates a completion date later than the Contract time or contractually required milestone completion date, the Agency may withhold Liquidated Damages for the number of days late. Should a subsequent schedule update which removes all or a portion of the delay be “Accepted” by the Engineer, all or the allocated portion of the previously held Liquidated Damages shall be released in the monthly progress payment to the Contractor immediately following such acceptance.

ADD the following subsection:

**6-1.3.4 Final Schedule Update.** The Contractor shall prepare and submit a final schedule update when one hundred percent of the Work is completed. The update must accurately represent the actual dates for all activities. The final schedule update shall be prepared and reviewed in accordance with 6-1.1.2. Acceptance of the final schedule update is required for release of funds retained per 9-3.2.

ADD the following subsection:

**6-1.3.5 Measurement and Payment.** If a Bid item for Construction Schedule is not listed in the Bid Schedule, payment shall be considered included in the various Bid items and no separate payment will be made.

## 6-2 PROSECUTION OF WORK.

ADD the following:

1. When a Subcontractor fails to prosecute a portion of the Work in a manner satisfactory to the Agency, Contractor shall remove such Subcontractor immediately upon written request of the Agency, and shall request approval of a replacement Subcontractor to perform the Work in accordance with the Subletting and Subcontracting Fair Practices Act (Pub. Contract Code, § 4100 *et seq.*) at no added cost to the Agency.

ADD the following:

### 6-2.1 Order of Work.

1. The Contractor shall incorporate the requirements of the city, utility companies or agencies having jurisdiction over the Work in accordance with 2-4 Cooperation and Collateral Work. The work to be done shall consist of furnishing, all labor, equipment, and materials, and performing all operations necessary to complete the Project Work as shown on the Plans or Special Provisions.
2. Specific sequencing constraints include, but are not limited to, the following phases unless otherwise authorized by the agency.

ADD the following:

### 6-2.2 Moratoriums.

1. When moratorium periods are specified in the Special Provisions, Contractor shall stop Work and completely demobilize all construction related activity, equipment, and materials within the stated limits prior to the beginning of the moratorium periods at no additional cost to the Agency. The Contractor shall complete any Work that has been started prior to the start of the moratorium.
2. Contractor shall restore and clean the Site prior to each moratorium. The Contractor shall not leave equipment, materials, or traffic control on the Site during the moratorium periods. Trenches shall be backfilled during moratorium periods. Temporary resurfacing or steel plate covers over trenches shall not be used.
3. The payment for complying with moratorium requirements shall be included in the Contract Bid. Contractor shall not be entitled to any additional costs for repeated mobilization and demobilization to continue the Work after the moratorium periods.

### 6-3 TIME OF COMPLETION.

#### 6-3.1 General.

ADD the following:

1. Unless otherwise specified in the Contract, the time of completion of the Contract shall be expressed in Working Days.
2. The number of Working Days specified for the walk-through, preparation, and the completion of Punchlist items until acceptance shall be included in the stipulated Contract Time.
3. For pipeline Projects, the following shall be included in the stipulated Contract Time:
  - a. Complete each street segment within 15 Working Days from the day the final road surfacing is placed. Each completed segment shall include other incidental Work items (weed abatement, damaged asphalt pavement replacement, asphalt patching, resurfacing, striping, markings, raised pavement markers, and inlet markers).
  - b. Where shutdowns of 16-inch and larger pipes are required, there is a shutdown moratorium from May until October. The Contractor shall plan and schedule Work accordingly. No additional payment or Working Days will be granted for delays due to the moratorium.
4. When specified in the Contract Documents, the Plant Establishment Period (PEP) is included in the stipulated Contract Time and shall begin with the acceptance of the installation of the vegetation plan in accordance with Part 8 – LANDSCAPING AND IRRIGATION.
5. The Contractor shall obtain the written approval of the Engineer to perform any Work outside of normal Work hours. This approval must be obtained at least 48 hours prior to commencement of such Work. The Contractor shall pay any additional costs for inspection or testing of such Work.
6. Work that is required by the Engineer to occur outside of normal Work hours will be identified in the Special Provisions.
7. The Contractor shall not perform Work during moratoriums per 6-2.2 or during any periods of restriction identified in agency permits or Project environmental documents and shall include all such schedule constraints in the Construction Schedule.

8. No additional payment or adjustment of Bid item prices or adjustment of Contract Time will be made for the Contractor's inability to work outside of normal Work hours if Contractor's request is denied by the Engineer or during prohibited periods.
9. Contractor's schedule shall plan for a minimum of 2 weeks after final walk-through to receive a final punch list from the Agency.

#### 6-4 DELAYS AND EXTENSIONS OF TIME.

##### 6-4.1 General.

ADD the following:

1. The Agency shall only grant an extension of time if the Extra Work or unforeseen condition impacts the Project's critical path. All requests for an extension in Contract Time for any Extra Work or unforeseen event shall be demonstrated by using the CPM. No other scheduling method shall be used to calculate the Project's schedule.

##### 6-4.2 Extensions of Time.

DELETE in its entirety and SUBSTITUTE with the following:

1. The Contract Time shall be modified only by Change Order.
2. Contractor shall immediately submit to the Agency a written request for a Change Order to modify the Contract Time, but in no event later than 1 Working Day after the occurrence and discovery of the events giving rise to the request. Contractor shall include in Contractor's request a general description of the basis for and the estimated length of any extension and submit supporting data, including a time impact analysis setting forth the claimed Critical Path impacts to the Construction Schedule consistent with Section 1.14 (Change Orders, Delays, and Extensions of Time).
3. The Engineer shall not grant an extension of Contract Time unless Contractor demonstrates, through an analysis of the critical path, the following:
  - a. The event causing the delay impacted the activities along the Project's critical path.
  - b. The increases in the time to perform all or part of the Project beyond the Contract Time arose from unforeseeable causes beyond Contractor's control and without Contractor's fault or negligence.
  - c. All Project float has been used.
4. The Engineer shall issue a weekly document that stipulates the Contract Time. If Contractor does not agree with this document, Contractor shall submit to the Engineer for review a written protest supporting Contractor's objections to the document within 15 Working Days after receipt of the weekly document. Contractor's failure to file a timely protest shall constitute Contractor's acceptance of the Engineer's weekly document.
  - a. Contractor's protest will be considered a claim for time extension and shall be subject to 2-10.1, "Claims".

##### 6-4.4 Written Notice and Report.

DELETE in its entirety and SUBSTITUTE with the following:

1. Contractor's failure to file with the Engineer a written request and report of cause within 24 hours will be considered grounds for refusal by the Agency to consider such request.



2. The Contractor shall provide written notice to the Engineer within 2 hours after the beginning of the delay, or when the Contractor has placed any workers or equipment on standby for any reason that the Contractor has determined to be caused by the Agency or by any organization that the Agency may otherwise be obligated by. The Contractor shall provide continuing daily written notice to the Engineer, each Working Day, throughout the duration of such period of delay. The initial and continuing written notices shall include the classification of each worker and supervisor and the make and model of all equipment placed on standby, the cumulative duration of the standby, the Contractor's opinion of the cause of the delay and a cogent explanation of why the Contractor could not avoid the delay by reasonable means. Should the Contractor fail to provide the notice(s) required by this section the Contractor agrees that no delay has occurred and that it will not submit any claim(s) therefor.
3. The request for payment or extension must be made at least 15 Calendar Days prior to the specified completion date. Failure by the Contractor to provide notices and reports as specified in the Contract will be considered grounds for refusal by the Agency to consider such request.

## 6-6 SUSPENSION OF THE WORK.

### 6-6.1 General.

ADD the following:

1. The Agency reserves the right to issue a stop work notice for any trenching operation if Contractor is not proceeding within a reasonable period of time to restore the pavement and Site cleanup. A reasonable period of time is considered to be 5 to 10 Working Days after backfilling any 1 block, approximately 600 feet, of pipeline. The Engineer shall determine the period of time allowed which shall not be subject to dispute.
2. During periods when the Work is suspended, Contractor shall be prepared for any emergency Work that shall be supervised by Contractor's representative.
3. Trenching operations are subject to suspension if the Contractor does not comply with the requirements for the maximum length of open trench specified in 306-3.5.

## 6-7 TERMINATION OF THE CONTRACT FOR DEFAULT.

### 6-7.1 General.

Add the following:

Contractor fails to notify the Engineer upon discovery of items of Native American, Archaeological, or Paleontological interests.

## 6-8 TERMINATION OF THE CONTRACT FOR CONVENIENCE.

DELETE in its entirety and SUBSTITUTE with the following:

1. At any time, the Agency may at its sole discretion terminate this Contract in whole or in part. If the Agency decides to terminate this Contract for convenience, the Agency shall issue a written notice of termination for convenience in accordance with 5-2, "SPECIAL NOTICES." Upon receipt of this notice, Contractor shall immediately proceed as follows:
  - a. Stop Work immediately or in accordance with the Notice of Termination.

- b. Notify Subcontractors and Suppliers to immediately cease their Work and place no further subcontracts for materials, services, or facilities except as necessary to complete any authorized continued portion of the Contract.
- c. Terminate all subcontracts to the extent that they relate to the Work terminated.
- d. With approval by the Engineer, settle all outstanding obligations arising from the termination of subcontracts. This approval shall be final for the purposes of this section.
- e. As directed by the Engineer, transfer and deliver completed or partially completed drawings, plans, calculations, specifications, and any other documents and records that, if the Contract had been completed, would be required to be furnished to the Agency.
- f. Complete the performance of the Work not terminated.
- g. Take all necessary steps and actions to minimize all costs to the Agency as a result of the termination.
- h. Take any action that may be necessary or that the Engineer may direct for the protection and preservation of the property related to the Contract that is in Contractor's possession and in which the Agency has or may acquire an interest.

#### 6-8.1 Termination Cost.

1. The Agency shall determine and pay Contractor the fair and reasonable amounts for Contractor's termination cost as follows:
  - a. The Contract Price for completed services accepted by the Engineer not previously paid or adjusted for any saving of freight and other charges.
  - b. The fair and reasonable cost of settling and paying termination settlements for terminated subcontracts that are chargeable to the terminated portion of the Contract.
  - c. The Agency shall pay Contractor a prorated amount of profit for Work that Contractor performed. The Agency shall not pay for lost profit on Work that was not performed by Contractor.

#### 6-8.2 Termination Settlement.

1. After termination, Contractor shall submit a final termination settlement proposal to the Engineer no later than 3 months from the effective date of termination, unless extended in writing by the Engineer.
2. If Contractor fails to submit the proposal within the time allowed, the Agency may determine and pay the fair and reasonable amount that may be due Contractor as a result of the termination. If Contractor does not agree that the amount determined by the Engineer is fair and reasonable, Contractor must notify the Engineer within 30 Calendar Days of receipt of payment.

#### 6-8.3 Determination of Amount Due the Contractor.

1. In determining the amount due Contractor, the Agency shall deduct the following:
  - a. The fair value of property destroyed, lost, stolen, or damaged that has become undeliverable to the Agency.
  - b. Any claim which the Agency has against Contractor under the Contract.

6-8.4 Records and Documents Relating to Termination.

1. The Engineer will file an Agreement of Mutual Rescission of Contract with the Board. Once the Agreement is executed and a Notice of Completion is recorded, retention can be released.
2. Unless otherwise specified or required by statute, Contractor shall maintain all records and documents relating to the terminated portion of the Contract for 3 years after final settlement. This includes all books and other evidence bearing on Contractor’s costs, expenses, and settlement under the Contract. Contractor shall make these records and documents available to the Agency, at Contractor’s office, at all reasonable times, without any direct charge. If approved by the Engineer, Contractor may maintain photographs, microphotographs, and other authentic reproductions instead of original records and documents.

6-8.5 The Agency’s Right to Terminate or Suspend for Loss of Project Funds.

1. The Agency may terminate or suspend the Contract at its sole discretion if the State of California or its agents render the funds being used to fund this Project unavailable. If the Agency chooses to suspend the Contract, that suspension shall last until funds are identified and approved by the Board, whichever is appropriate, to be used to complete this Project. If the Agency elects under this provision to terminate the Contract, neither Party is entitled to compensation from the other Party for any costs arising from such termination. The Agency may also elect to terminate after invoking a suspension under this provision.

6-9 LIQUIDATED DAMAGES.

DELETE in its entirety and SUBSTITUTE with the following:

1. Contractor’s failure to complete the Work within the time allowed shall result in damages being sustained by the Agency. Such damages are, and shall continue to be, impracticable and extremely difficult to determine. For each consecutive Working Day in excess of the time specified for the completion of the Work, as adjusted in accordance with 6-4, “DELAYS AND EXTENSIONS OF TIME”, Contractor shall pay to the Agency, or have withheld from monies due it, the sum described in the table below, along with any other damages that may be sustained by the Agency during the Project, unless otherwise specified in the Special Provisions.
2. The execution of the Contract shall constitute agreement between Contractor and the Agency that the liquidated damage amount described in the table below is the value of the damage caused by Contractor’s failure to complete the Work within the allotted time. Such sum shall not be construed as a penalty and may be deducted from Contractor’s payments if such delay occurs.

Contract Value	Liquidated Damage Daily Amount
Less than \$100,000	\$1,000
\$100,000 and more	\$2,500

3. Any progress payments made to Contractor after the specified completion date shall not constitute a waiver of payment for damages sustained by the Agency under this section.



ADD the following:

6-10 ELECTRONIC COMMUNICATION.

1. When specified in the Contract Documents, Contractor shall post all communications addressed to the Engineer concerning construction including RFIs, submittals, daily logs, and transmittals to the Procore established for the Project. The Contractor shall maintain a list of scheduled activities including planned and actual execution dates for all major construction activities and milestones defined in the approved Schedule. The Contractor shall review and act on all communications addressed to the Contractor in the Project management website. A user's guide to the Project management system may be available on the City's website and shall be provided to Contractor at the Pre-construction Meeting.
2. The payment for electronic communications shall be included in the Contract Price.

ADD the following:

6-11 PROCORE PROJECT MANAGEMENT AND COLLABORATION SYSTEM.

1. This project may utilize the Owner's Procore ([www.procore.com](http://www.procore.com)) online project management and document control platform. The intent of utilizing Procore is to reduce cost and schedule risk, improve quality and safety, and maintain a healthy team dynamic by improving information flow, reducing non-productive activities, reducing rework and decreasing turnaround times. The Contractor is required to create a free web-based Procore user account(s) and utilize web-based training / tutorials (as needed) to become familiar with the system. Unless the Engineer approves otherwise, the Contractor shall process all project documents through Procore because this platform will be used to submit, track, distribute and collaborate on project. If unfamiliar or not otherwise trained with Procore, Contractor and applicable team members shall complete a free training certification course located at <http://learn.procore.com/procore-certification-subcontractor>. The Contractor is responsible for attaining their own Procore support, as needed, either through the online training or reaching out to the Procore support team. It will be the responsibility of the Contractor to regularly check Procore and review updated documents as they are added. There will be no cost to the Contractor for use of Procore.
2. It is recommended that the Contractor provide mobile access for Windows, iOS located at <https://apps.apple.com/us/app/procore-construction-management/id374930542> or Android devices located at <https://play.google.com/store/apps/details?id=com.procore.activities> with the Procore App installed to at least one on-site individual to provide real-time access to current posted drawings, specifications, RFIs, submittals, schedules, change orders, project documents, as well as any deficient observations or punch list items. Providing mobile access will improve communication, efficiency, and productivity for all parties. The use of Procore for project management does not relieve the contractor of any other requirements as may be specified in the contract documents.

## SECTION 7 – MEASUREMENT AND PAYMENT

### 7-1 MEASUREMENT OF QUANTITIES FOR UNIT PRICE WORK.

#### 7-1.2 Methods of Measurement.

ADD the following:

The system of measure for this contract shall be the U.S. Standard Measures.

### 7-2 LUMP SUM WORK.

ADD the following:

#### 7-2.1 Schedule of Values (SOV).

1. Before construction, Contractor shall provide a schedule of values in accordance with Section 3-8 for all lump-sum Bid items that shall be used for the purpose of progress payments. The prices shall be valid for the purpose of partial payments and Change Orders to the Project.
2. The SOV shall:
  - a. Subdivide the Work into its respective parts.
  - b. Include values for all items comprising the Work.
  - c. Serve as the basis for monthly progress payments.
3. The Engineer is the sole judge of acceptable numbers, details, and description of values established. If, in the opinion of the Engineer, a greater number of SOV items than proposed by Contractor is necessary, add the additional items identified by the Engineer. When requested by the Engineer, provide substantiating data in support of the SOV.
4. The Contractor shall incorporate the SOV into the cost loading function of the Schedule in accordance with 6-1, "CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK." Monthly progress payment amounts for Lump Sum items shall be determined from the monthly updates of the Schedule activities.
5. The Contractor shall develop the SOV independently but simultaneously with the development of the Schedule activities and logic. Incorporate phase funding impacts, if applicable, into the Schedule.
6. The Contractor shall break down the Work not specifically included in the Bid as necessary for establishment of cost and Schedule activity.
7. Following acceptance of the SOV, the Contractor shall incorporate the changes (if any) into the cost loading portion of the Schedule. Where coordination of the Schedule and the SOV requires changes made to 1 or both documents, the Contractor shall propose changes to the SOV and to the Schedule activities to satisfy the Schedule cost loading requirements.
8. The Contractor shall update and submit these listings in conjunction with the Schedule monthly submittals.
9. The Contractor shall incorporate issued Change Orders or Field Orders in the Schedule into the SOV as single units identified by the Change Order or Field Order number.
10. Changes to the Schedule which add activities not included in the original Schedule but included in the original Work (schedule omissions) shall have values assigned as accepted by

the Engineer. Other activity values shall be reduced to provide equal value adjustment increases for added activities as accepted by the Engineer.

11. In the event that the Contractor and the Engineer agree to make adjustments to the original SOV because of inequities discovered in the original accepted SOV, increases and equal decreases to values for activities may be made.
12. The payment for the preparation of the SOV shall be included in the Contract Price.

### 7-3 PAYMENT.

#### 7-3.1 General.

DELETE the last paragraph in its entirety and SUBSTITUTE with the following:

If, within the time fixed by law, a properly executed notice to stop payment is filed with the Agency, due to the Contractor's failure to pay for labor or materials used in the Work, all money plus 25 percent due for such labor or materials will be withheld from payment in accordance with applicable laws. At the expiration of 30 Calendar Days from the date of recording the NOC, the amount deducted from the final estimate and retained by the Agency shall be paid to Contractor except such amounts as are required by law to be withheld by properly executed and filed notices to stop payment.

ADD the following:

1. Unless specified otherwise, the Contract Price includes use, consumer, and other taxes mandated by applicable legal requirements. The Contract Price is not subject to adjustment for tax increases.
2. As provided in California Public Contract Code Section 7105, if the Contract is not financed by revenue bonds, Contractor is not responsible for the cost of repairing or restoring damage to the Project when damage was proximately caused by an Act of God, in excess of 5% of the Contract Price, if the following occur:
  - a. The damaged portion of the Project was built in accordance with the Contract requirements.
  - b. There are no insurance requirements in the Contract for the damages.
3. Guarantee periods shall not be affected by any payment but shall commence on the date of recordation of the Notice of Completion.

#### 7-3.2 Partial and Final Payment.

DELETE the last paragraph in its entirety and SUBSTITUTE with the following:

Pursuant to Public Contract Code Section 22300, Contractor shall have the option, at Contractor's expense, to substitute for any money withheld by the Agency, securities equivalent to the amount being withheld. Securities eligible for such substitution are bank or savings and loans certificates of deposit or such securities which are eligible for investment pursuant to Government Code Section 16430. As to any such security or securities so substituted for monies withheld, Contractor shall be the beneficial owner of same and shall receive any accrued interest. Such security shall, at Contractor's request and expense, be deposited with the Agency or with a State or Federally Chartered bank as the escrow agent who shall pay such monies to Contractor upon notification by the Engineer that payment can be made. Such notification shall be given at



the expiration of 30 Calendar Days from the date of NOC, or as prescribed by law, provided however, that there shall be a continued retention of the necessary securities to cover such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be authorized by the Contract to be further retained.

ADD the following:

1. After final inspection, the Engineer will make a Final Payment Estimate and process a corresponding payment. This estimate will be in writing and shall be for the total amount owed the Contractor as determined by the Engineer and shall be itemized by the Contract Bid item and Change Order item with quantities and payment amounts and shall show all deductions made or to be made for prior payments and amounts to be deducted under provisions of the Contract. All prior estimates and progress payments shall be subject to correction in the Final Payment Estimate.

The Contractor shall have 30 Calendar Days from receipt of the Final Payment Estimate to make a written statement disputing any Bid item or Change Order item quantity or payment amount. The Contractor shall provide all documentation at the time of submitting the statement supporting its position. Should the Contractor fail to submit the statement and supporting documentation within the time specified, the Contractor acknowledges that full and final payment has been made for all Contract Bid items and Change Order items.

If the Contractor submits a written statement with supporting documents within 30 Calendar Days from receipt of the Final Payment Estimate, the Engineer will review the disputed item within 35 Calendar Days and make any appropriate adjustments on the Final Payment. Remaining disputed quantities or amounts not approved by the Engineer will be subject to resolution as specified in Section 2-10.1.1, Initiation of Claim.

The written statement filed by the Contractor shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of the disputed items. The Engineer will consider the merits of the Contractor's potential claims. It will be the responsibility of the Contractor to furnish within a reasonable time such further information and details as may be required by the Engineer to determine the facts or contentions involved in its claims. Failure to submit such information and details will be sufficient cause for denying payment for the disputed items.

2. Final Payment and release of Retention shall be paid after Contractor submits the following:
  - a. An affidavit that payrolls and bills for materials, equipment, and other indebtedness connected with the Work for which the Agency or the Agency's property might be responsible for or encumbered by. Fewer amounts withheld by the Agency shall have been paid for or otherwise satisfied.
  - b. If required in the Contract Documents, the successful completion and submittal of the required reports such as construction demolition, waste recycling, and hydrostatic discharge reports.

- c. Required documentation, record drawings, operations manuals, test reports, warranty documentation, and UL labels shall be submitted before requesting the release of retention.

ADD the following:

**7-3.2.1 Application for Progress Payment.**

1. By the 5th day of each month, sign, fill out, and submit to the Engineer a partial payment estimate that identifies acceptable Work performed during the previous month, or since the last partial payment estimate was submitted. If requested by the Engineer, provide such additional data as may be required to support the payment estimate. Such data may include submission of signed field orders and satisfactory evidence of payment for equipment, materials, and labor, including payments to Subcontractors and Suppliers.
2. For application for progress payments, Contractor shall use the format required by the Agency. An electronic copy of the invoice form is available from the Engineer upon request. Progress payments shall be signed, and the date of the invoice shall be the date that the invoice is submitted.
3. The Agency shall not pay progress or partial payments until Contractor submits to the Engineer an updated Schedule. It is solely the Contractor’s responsibility to prepare and submit the Schedule updates.
4. Disputed or incorrect applications shall be returned to the Contractor within 7 Calendar Days with documentation describing the reason for the rejection of the payment request.

ADD the following:

**7-3.2.2 Amount of Progress Payments.**

1. If an undisputed and properly submitted application for payment is received by the Engineer, the Agency shall pay Contractor within 30 Calendar Days after the Engineer receives the application for Payment consistent with Public Contract Code Section 20104.50. The Agency shall pay Contractor for the Work performed.

ADD the following:

**7-3.2.2.1 Progress Payment for Pipelines.**

1. Progress payments for pipelines shall be determined by multiplying the total number of linear feet of each of the following operations completed during the payment period, by the corresponding percentage given below, and the Contract Unit Price for the particular main(s) or drain(s).
2. The progress payment may include payment for items in the Bid proposal, other than mains, which have been installed complete during the payment period.
3. Payment breakdown shall be as follows:

OPERATION	PERCENTAGE
WATER:	
Trench Excavation, Pipe in Place, Backfill and Cleanup.	80%
Hydrostatic and Bacterial Testing, Pavement Restoration and Final Cleanup	20%

OPERATION	PERCENTAGE
<b>SEWER:</b>	
Trench Excavation, Pipe in Place, Backfill and Cleanup.	80%
Testing (Wayneball and/or Mandrel), Pavement Restoration and Final Cleanup.	20%
<b>STORM DRAIN:</b>	
Trench Excavation, Pipe in Place, Backfill and Cleanup.	80%
Pavement Restoration and Final Cleanup.	20%
<b>SEWER MAIN REHABILITATION:</b>	
Cleaning, Televising, liner installation, point repairs, and lateral reinstatements.	80%
Approval of pipeline rehabilitation verified by Final Video.	20%

4. In asphalt-surfaced streets, the Agency shall pay 15% for hydrostatic and bacterial testing, Wayneball and Mandrelling (where necessary), for water and sewer utility constructions respectively, and operational testing for storm drains, including the trench cap and cleanup. The Agency shall pay the remaining 5% after completing the asphalt wearing surface and final cleanup.
5. Trench excavation, pipe in place, backfill, and cleanup of construction debris are 1 operation that shall be complete before the Agency pays the first 80%.

ADD the following:

**7-3.2.3 Waiver of Claims at Final Payment.**

1. Contractor’s acceptance of Final Payment constitutes a waiver of affirmative claims by Contractor, except those previously made in writing and identified as unsettled at the time of Final Payment, which are expressly reserved by Contractor from operation of its Release of Claims pursuant to Public Contract Code Section 7100 or other Applicable Law.

ADD the following:

**7-3.2.4 Withholding of Payment and Back Charge.**

1. The Engineer may withhold payment for any of the following reasons:
  - a. Defective or incomplete Work.
  - b. Stop notices, wage orders, or other withholdings required by Applicable Law.
  - c. Contractor’s failure to comply with 5-3.3, “Payroll Records” and the Contractor Registration and Electronic Reporting System requirements of the Contract Documents.
  - d. Failure to submit monthly Construction Schedule updates.
2. The Engineer may back charge the Contractor for any of the following reasons:
  - a. Defective or incorrect Work not remedied.
  - b. Damage to Agency property or a third party’s property that was caused by Contractor.
  - c. Liquidated Damages.
  - d. Non-attendance at meetings without prior cancellation notice.
  - e. Failed inspections or re-inspections paid by the Agency.



### 7-3.3 Delivered Materials.

DELETE in its entirety and SUBSTITUTE with the following:

1. The cost of materials and equipment delivered but not incorporated into the Work will not be included in the progress estimate.

ADD the following:

#### 7-3.3.1 Payment for Stored Materials on Site.

ADD the following:

##### 7-3.3.1.1 General.

1. When authorized, Contractor may request payment for materials and equipment which has not been incorporated into the Work but will be at a later date and will be delivered and stored at the Project Site.
2. The material shall meet the Contract requirements and the material's required test results and certifications shall be filed with the Engineer.
3. Only non-perishable materials for major items of Work or Materials Subject to Price Adjustment shall be considered for payment for on-site storage. However, each individual item has a value of more than 1% of the Contract Price and shall become a permanent part of the Work.
4. Materials cost shall be evidenced by the manufacturer's paid invoice bearing the statement that Contractor has paid all invoices in full.
5. The payments for the stored materials shall not exceed the invoice price or 60% of the Bid prices for the pay items into which the materials are to be incorporated, whichever is less, unless otherwise approved by the Engineer.
6. Apply for the payment for materials stored on a form provided by the Engineer and attach documentation to show the following:
  - a. The amount paid on the invoice (or other record of production cost) for the stored items.
  - b. The dollar amount of the material incorporated into each of the various Work items for the month.
  - c. The amount that should be retained for stored materials.
  - d. That Contractor has received the materials and equipment free and are clear of all liens, charges, secured interests, and encumbrances.
  - e. That the materials and equipment are covered by the appropriate property insurance in accordance with the insurance provisions and other arrangements that protect the Agency's interest.
7. Contractor shall provide the Engineer, upon request and prior to any partial payment, documentation which transfers full legal title to such materials to the Agency conditional only upon receipt of the Final Payment. Such transfer of title or any partial payment shall not constitute acceptance by the Agency of the materials nor shall it void the right to reject materials subsequently found to be unsatisfactory in accordance with SECTION 4 – CONTROL OF MATERIALS. This shall also not relieve Contractor of any obligation arising under the Contract Documents.
8. The payments for materials on-site are subject to retention as set forth in 7-3.2, "Partial and Final Payment".

9. Contractor shall assume all risks associated with the loss or damage to the stored products for which payment has or has not been received.
10. Equipment and materials shall be stored in accordance with manufacturer's recommendations. The stored products shall be in a form ready for installation. The Agency shall not pay for raw materials or parts and pieces of equipment.
11. Any and all surplus materials that are not incorporated in the Work shall become Contractor's property at no additional cost to the Agency.
12. Unless specifically provided in the Contract, payment for the materials on hand shall not be included when determining the percentage of Work completed.
13. The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the job site in the quantities involved, plus sales tax, freight, and delivery.

The Agency reserves the right to approve materials and sources of supply, or to supply materials to the Contractor, if necessary, for the progress of the Work. No markup shall be applied to any material provided by the Agency.

ADD the following:

#### 7-3.3.1.2 Payment for Stored Materials Offsite.

1. The payment of materials and equipment delivered and stored offsite shall be contingent upon Contractor's compliance with the storage and protective maintenance requirements set forth in the Contract Documents and all other requirements necessary to preserve equipment warranties for the benefit of the Agency.
2. The Agency reserves the right to refuse approval for the payment of any equipment or materials suitably stored offsite in its sole discretion, regardless of whether all conditions in the Contract Documents have been met.
3. Partial payment may be made for products eligible for offsite delivery and storage only upon Contractor's presentation of a bill of sale, a paid invoice, or an affidavit certifying that the material is received by the Contractor free and clear of all liens, encumbrances, and secured interest of any kind including offsite delivery.
4. Partial payment for products delivered and stored offsite shall be contingent upon Contractor's compliance with the storage and protective maintenance requirements set forth in the Contract Documents and all other requirements necessary to preserve equipment warranties for the benefit of the Agency.
5. The cost of materials and equipment delivered but not incorporated into the Work will not be included in the progress estimate.
6. Costs associated with the delivery to and storage at an offsite facility shall be at Contractor's expense regardless of the Engineer's approval to deliver and store the materials.
7. Contractor shall provide written evidence to the Engineer of having made arrangements for unrestricted access by the Agency and the Agency's authorized representatives to the materials wherever stored, including provisions for the Agency to take control and possession of such materials at any time and without restriction. Contractor shall furnish the Engineer a permit of entry, from the owner of the property, for at least 6 months after the NOC has been filed. The permit of entry shall contain information similar to the following:

PERMIT OF ENTRY: Permission is granted to the Agency and its designated employees or agents to enter upon the property described in this permit for a period of not less than 6 months after the NOC has been filed for (**El Camino Real Widening From Sunny Creek Road to Jackspar Drive**) for the purpose of removing materials for which advance materials on hand payment has been made to (Contractor's Name). The property is owned by (Owner's Name) and is described as follows: (Address and Description of Property). (Include signature(s) and date(s) for owner and lessee or purchaser, and, if appropriate, attach a copy of a warehouse receipt or contract for storage.

8. The material shall be clearly marked and identified as being specifically fabricated, produced, and reserved for use on the Project. The Contractor shall provide payment documentation for the materials.

#### 7-3.4 Mobilization.

ADD the following:

When a Bid item is included for Mobilization, and subject to the conditions and limitations set forth herein, the costs of work in advance of construction operations and not directly attributable to any specific Bid item will be included in the progress estimate. When no such Bid item is provided, payment for such costs will be considered as included in the other Bid items of Work. Mobilization includes furnishing all insurance, bonds, and licenses and all Work necessary for the movement of personnel, equipment, supplies, and incidentals to and from the Site; for establishment of all offices, buildings, storage yards, and temporary utilities or facilities necessary for the Work; and for all other Work and operations which shall be performed prior to beginning the Work or after completion of the Work, excepting those specifically paid for under separate Bid items. Such operations shall include, but are not limited to, coordination with Agency forces; securing permits; surveying and staking; utility mark-out; securing construction water supply and temporary power necessary for construction; temporary construction fencing; installing, maintaining and removing project signs; providing on-site sanitary facilities; posting OSHA and labor compliance notices and establishing safety programs; preparing, maintaining and submitting the project record drawings; and any other Work or services not included in any other Bid item.

The complete dismantling and removal of the Contractor's temporary facilities, equipment, materials, construction wastes, and personnel from the Site at the completion of the Work, referred to as demobilization, is included in the payment for Mobilization.

When price for this Bid item is limited to a percentage of the total Contract price, it shall be so indicated in the Bid Form.

The Contract price paid for Mobilization shall include all items and operations as described in this subsection and no additional payment shall be made.

Progress payments for Mobilization will be made as follows:

- a) First progress payment (after the issuance of the Notice to Proceed): payment will be made at forty percent (40%) of the amount bid for Mobilization.



- b) Second progress payment: payment will be made at fifty percent (50%) of the amount bid for Mobilization.
- c) The remaining 10% of the Bid price for Mobilization will be made when all punch list items are completed to the satisfaction of the Engineer and the Contractor has demobilized from the Project Site.

### 7-3.5 Contract Unit Prices

#### 7-3.5.1 General.

DELETE the second to fourth paragraph and REPLACE with the following:

1. If a change is ordered in an item of work covered by a Contract Unit Price, and such change does not involve substantial change in character of the Work from that shown on the Plans or specified in the Specifications, then an adjustment in payment will be made. This adjustment will be based upon the increase or decrease in quantity and the Contract Unit Price.
2. If the actual quantity of an item of work covered by a Contract Unit Price and constructed in conformance with the Plans and Specifications varies from the Bid quantity by 50 percent or less, payment will be made at the Contract Unit Price. If the actual quantity of the item of work varies from the Bid quantity by more than 50 percent, payment will be made per Section 2-7.3 or 2-7.4 as appropriate.
3. If a change is ordered in an item of work covered by a Contract Unit Price, and such change does involve a substantial change in the character of the Work from that shown on the Plans or specified in the Specifications, an adjustment in payment will be made per Section 2-7.6.

ADD the following:

1. Unit Bid prices shall not be subject to adjustment regardless of quantity used or if none is used for the following Bid items:
  - a. additional bedding
  - b. imported backfill
  - c. shoring
  - d. water services and connections
  - e. water pollution control items
  - f. point repairs for existing sewer mains
  - g. additional point repairs for existing sewer mains
  - h. sewer lateral connections
  - i. sewer lateral linings
  - j. traffic control
  - k. additional equipment

#### 7-3.5.2 Increases of More Than 50 Percent.

DELETE in its entirety and REPLACE with the following:

Should the actual quantity of an item of Work covered by a Contract Unit Price and constructed in conformance with the Plans and Specifications, exceed the Bid quantity by more than 50 percent, payment for the quantity in excess of 150 percent of the Bid quantity will be made on

the basis of an adjustment in the Contract Unit Price mutually agreed to by the Contractor and the Agency, or at the option of the Engineer, on the basis of Extra Work per Section 2-8. The Extra Work per Section 2-8, basis of payment, shall not include fixed costs. Fixed costs shall be deemed to have been recovered by the Contractor through payment for 150 percent of the Bid quantity at the Contract Unit Price.

#### 7-3.5.3 Decreases of More Than 50 Percent.

DELETE in its entirety and REPLACE with the following:

Should the actual quantity of an item of Work covered by a Contract Unit Price, and constructed in conformance with the Plans and Specifications, be less than 50 percent of the Bid quantity, an adjustment in payment will not be made unless so requested in writing by the Contractor. If the Contractor so requests, payment will be made on the basis of an adjustment in the Contract Unit Price mutually agreed to by the Contractor and the Agency, or at the option of the Engineer, on the basis of Extra Work per Section 2-8; however, in no case will payment be less than would be made for the actual quantity at the Contract Unit Price nor more than would be made for 50 percent of the Bid quantity at the Contract Unit Price.

#### 7-3.6 Stipulated Unit Prices.

DELETE in its entirety and REPLACE with the following:

Stipulated Unit Prices are unit prices established by the Agency in the Contract Documents as distinguished from Contract Unit Prices submitted by the Contractor. Stipulated Unit Prices may be used for the adjustment of Contract changes when so specified in the Supplemental General Provisions.

#### 7-3.7 Agreed Prices.

DELETE in its entirety and REPLACE with the following:

Agreed Prices are prices for new or unforeseen Work, or adjustments in Contract Unit Prices per Section 7-3.5, established by mutual agreement between the Contractor and the Agency. If mutual agreement cannot be reached, the Engineer may direct the Contractor to proceed on the basis of Extra Work in accordance with Section 2-8, except as otherwise specified in Sections 7-3.5.2 and 7-3.5.3.

#### 7-3.8 Eliminated Items.

DELETE in its entirety and REPLACE with the following:

Should any Bid item be eliminated in its entirety, payment will be made to the Contractor for its actual costs incurred in connection with the eliminated item prior to notification in writing from the Engineer so stating its elimination. If material conforming to the Plans and Specifications is ordered by the Contractor for use in the eliminated item prior to the date of notification of elimination by the Engineer, and if the order for that material cannot be canceled, payment will be made to the Contractor for the actual cost of the material. In this case, the material shall become the property of the Agency. Payment will be made to the Contractor for its actual costs for any further handling. If the material is returnable, the material shall be returned, and payment will be made to the Contractor for the actual cost of charges made by the supplier for returning

the material and for handling by the Contractor. Actual costs, as used in this Agency Supplement, shall be computed on the basis of Extra Work per Section 2-8.

ADD the following:

#### 7-3.9 Field Orders.

1. The Agency shall pay Field Order items of the Work in accordance with the limits below if the cumulative total of Field Orders does not exceed the Field Orders” Bid Item:

Contract Price	Maximum Field Order Amount
Less than \$100,001	\$2,500
\$100,001 to \$1,000,000	\$5,000
\$1,000,001 to \$5,000,000	\$10,000
Greater than \$5,000,000	\$20,000

ADD the following:

#### 7-3.10 Compensation Adjustments for Price Index Fluctuations.

1. Unless otherwise specified, the provisions of this section apply only to the paving asphalt used in the following:
  - a. Asphalt Concrete Pavement
  - b. Asphalt Pavement Repair
  - c. Scheduled and Unscheduled Base Repair
  - d. Slurry Seal or any other asphalt emulsion
2. The compensation for paving asphalt shall be increased or decreased for paving asphalt price fluctuations in accordance with 9-1.07 “Payment Adjustments for Price Index Fluctuations” in the Caltrans Standard Specifications.
3. The adjustment in compensation shall also be subject to the following:
  - a. Show the provided compensation adjustments separately on payment estimates. Contractor is liable to the Agency for decreased compensation adjustments and the Engineer may deduct the amount from moneys payable or that may become payable to Contractor.
  - b. In the event of an overrun of Contract Time, adjustment in compensation for asphalt binder included in estimates during the overrun period shall be determined using the California Statewide Crude Oil Price Index in effect on the first business day of the month within the pay period in which the overrun began.
  - c. In the event that the companies discontinue posting their prices for a field, the Engineer shall determine an index from the remaining posted prices. The Agency reserves the right to include in the index determination the posted prices of additional fields.
4. Contractor may opt out of the payment adjustments for price index fluctuations when specified in the Contract Documents by submitting a letter with the Bid.

### 7-4 PAYMENT FOR EXTRA WORK.

#### 7-4.1 General.

ADD the following:



1. With every request for payment, Contractor shall submit to the Engineer a breakdown showing monthly and cumulative amounts of the Work performed under the Change Order by Contractor and Contractor's Subcontractors. The reporting format shall be approved by the Engineer.

#### 7-4.2 Basis for Establishing Costs.

##### 7-4.2.1 Labor.

ADD the following:

1. The Agency reserves the right to request the following:
  - a. Financial records of salaries for an employee.
  - b. Wage rates/Certified Payroll.
  - c. Bonuses and deductions.
2. Contractor shall list the labor rates of its personnel and Subcontractors who work on the Project. The payment for payroll records is included in the Contract Price.
3. If Contractor's proposal for Extra Work is based upon services and Work to be performed outside Normal Working Hours, the labor charges associated with the Extra Work shall consist of straight time wages and burdens plus the appropriate overtime or shift premium with no additional burdens, such as fringe benefits, on the premium portion.

##### 7-4.2.3 Tool and Equipment Rental.

DELETE in its entirety and SUBSTITUTE with the following:

1. No payment shall be made for the use of tools which have a replacement value of \$200 or less.
2. Regardless of ownership, the rates and delay factors to be used in determining equipment rental costs shall not exceed those listed in the latest edition of the Caltrans publication entitled "Labor Surcharge and Equipment Rental Rates" preceding the date the Work is accomplished. The latest edition of the Caltrans publication is available at [www.dot.ca.gov](http://www.dot.ca.gov). The delay factors therein shall be used as multipliers of the rental rates for determining the value of costs for delay to the Contractor and Subcontractors, if any. The labor surcharge rates published therein are not a part of this Contract.
3. Contractor shall be entitled to a rental rate adjustment when Contractor can substantiate that the rental rates prevailing locally exceed the published rates by more than 15%. For equipment not listed in the Caltrans publication, rental rates shall not exceed listed rates prevailing locally at equipment rental agencies or distributors at the time the Work is performed.
4. Whenever possible, Extra Work shall be accomplished using equipment available on Site or owned by Contractor. If a specific piece of equipment shall be rented to be used exclusively for the Extra Work, the rental rate shall be the invoiced rate. The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Necessary loading and transportation costs for equipment used on the Extra Work shall be included.
5. If rental equipment is not being used or used intermittently and could be returned to its rental source rather than holding it at the Work Site, the Contractor shall return the equipment at

no expense to the Agency unless Contractor elects to keep it at the Work Site at Contractor's expense.

6. The reported rental time for equipment already at the Work Site shall be the duration of its use on the Extra Work. This time shall begin when equipment is first used on Extra Work, plus the time required to move it from its previous site and back or from its previous site to a closer site.
7. All equipment shall be acceptable to the Engineer, in good working condition, and suitable for the purpose for which it is to be used.

#### 7-4.3 Markup.

##### 7-4.3.1 Work by the Contractor.

DELETE in its entirety and REPLACE with the following:

The following percentages shall be added to the Contractor's costs and shall constitute the markup for all overhead and profits:

Labor	20
Materials	15
Equipment Rental	15
Other Items and Expenditures	15

To the sum of the costs and markups provided for in this section, 1% shall be added as compensation for bonding.

##### 7-4.3.2 Work by a Subcontractor.

DELETE in its entirety and REPLACE with the following:

When all or any part of the Extra Work is performed by a Subcontractor, the markup established in 7-4.3.1 shall be applied to the Subcontractor's actual cost of such Work. A markup of 10 percent on the first \$5,000 of the subcontracted portion of the Extra Work and a markup of 5 percent on Work added in excess of \$5,000 of the subcontracted portion of the Extra Work may be added by the Contractor.

#### 7-4.4 Daily Reports.

ADD the following:

Payment for Extra Work will not be made until such time that the Contractor submits completed daily reports and all supporting documents to the Engineer.

ADD the following:

#### 7-6 BID ITEM DESCRIPTIONS.

Payment for each Bid Item shall be made at the quantity and type as listed in the Contractor's Proposal. All work shown or mentioned on the plans, in the Contract Documents, General Provisions, or Technical Specifications shall be considered as included in the Bid Items.

### **Bid Item No. 1**

**Mobilization:** Payment for “Mobilization” will be made at the stipulated lump-sum price bid therefore in the bid schedule, and includes full compensation for furnishing all insurance, bonds, licenses, labor, materials, utilities, tools, equipment and incidentals, and for doing all the work involved in mobilization and preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidental to preparing to conduct work on and off the project site and other offsite facilities necessary for work on the project; for all other facilities, sureties, work and operations which must be performed or costs incurred prior to beginning work on various contract items on or off the project site, excepting those specifically paid for under separate sections of these specifications. The Contractor hereby agrees that the stipulated lump sum amount is sufficient for Mobilization and Preparatory Work, as described in this section, and that the Contractor shall have no right to additional compensation for Mobilization and Preparatory Work. Contractor is aware that they are adjacent to a live golf course and shall prepare for protection accordingly. This is not limited to netting, protecting equipment, and all personnel on the project site. Payment for protection on a live golf course shall be included in the lump-sum bid for Mobilization, and no additional payment will be made.

### **Bid Item No. 2**

**Construction Schedule:** Payment for “Construction Schedule” will be paid for at the stipulated lump sum price. The stipulated lump sum price paid for Construction Schedule shall include full compensation for furnishing all labor, materials including, but not limited to, the computer hardware and software, tools, equipment, and incidentals; and for doing all the Work involved in attending meetings, preparing, furnishing, updating, revising the tabular, bar and flow chart Construction Schedules and narrative reports required by these supplemental provisions and as directed by the Engineer. The Engineer’s determination that each and any Construction Schedule proposed by the Contractor complies with the requirements of these supplemental provisions shall be precedent to each and any payment for the Construction Schedule. Payments for Construction Schedule will be made as per Sections 6-1.8.1 through 6-1.8.3.

### **Bid Item No. 3**

**Erosion Control and Water Pollution Control:** Payment for “Erosion Control and Water Pollution Control” shall be made at the contract lump sum price and shall constitute full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing the work involved in installing and maintaining any and all storm water BMPs for the duration of the project, as specified herein, and as directed by the Engineer and no additional compensation shall be allowed therefor. This work shall include preparing, obtaining approvals, revising and amending the project SWPPP, installing, constructing, maintaining, removing and disposing of all Best Management Practices (BMPs) specified in the SWPPP and as required by applicable codes and in strict accordance with the State Water Board, maintenance of storm water and non-storm water best management practices (BMPs) throughout the duration of all Work, implementing a rain action plan, storm water sampling and analysis day, preparing a storm water annual report, and job site management. These requirements shall also apply to any offsite storage yards or construction laydown areas utilized for this project. The lump sum bid price shall include payment



of application and annual fees required by the SDRWCB until the date of the projects' substantial completion and no additional compensation shall be allowed therefor.

**Bid Item No. 4**

**Temporary Traffic Control:** Payment for "Temporary Traffic Control" shall be made at the contract lump sum price. This shall include all temporary traffic pavement markers, temporary channelizers, temporary signing, temporary railing (type K), temporary crash cushions, temporary barricades, temporary plastic drums, portable flashing beacons, and temporary appurtenances thereto shown on the plans or required in the specifications and payment therefore shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in applying, installing, maintaining, and removing temporary traffic pavement markers, channelizers, signing, railing (type K), crash cushions and appurtenances, complete in place, as shown on the plans, as specified in the Standard Specification and these special provisions, and as directed by the Engineer. Payment for temporary crash cushions, concrete barriers and the signs and reflectors marking them shall include the installation, grading for installation, grading for the approach path, maintenance, painting and re-painting, replacement of damaged units and removal and shall also be included in the lump-sum price bid for traffic control. Payment for installation and/or relocation of K-rails and crash cushions when not shown on the plans and requested by the Engineer shall be made per section 2-8, Extra Work, SSPWC.

**Bid Item No. 5**

**Clearing and Grubbing:** Payment for "Clearing and Grubbing" shall be made at the contract lump sum price for clearing and grubbing within the project limits and at stockpile locations and no other payments will be made. Unless otherwise noted on plans, the Contractor shall remove all existing abandoned pipelines and conduits of any type, or use, and pipelines and conduits of any type, or use, that are abandoned during the course of the work and shall replace said pipelines and conduits with properly compacted soils. Payment for removal and disposal of abandoned utilities shall be included in the lump-sum bid for Clearing and Grubbing, and no additional payment will be made.

**Bid Item No. 6**

**Asphalt Concrete:** Payment for "Asphalt Concrete" shall be at the unit price bid per ton. No additional payment shall be made for any tack coat or sand blotter. Unit price bid shall include full compensation for furnishing all labor, materials, tools, equipment, and all related and appurtenant work to complete the work in place.

**Bid Item No. 7**

**Aggregate Base:** Payment for "Aggregate Base" shall be measured and paid for on a compacted cubic yard basis at the thickness shown in the Bid Schedule. Unit price bid shall include full compensation for furnishing all labor, materials, tools, equipment, hauling, excavation, removal and disposal of surplus materials, compaction and all related and appurtenant work to complete the work in place.

**Bid Item No. 8**

**Unclassified Excavation:** Payment for “Unclassified Excavation” will be made at the unit price per cubic yard. Only the quantity of unclassified excavation measured shall be paid for. No excavated material which is re-excavated will be paid for. For progress payments, the quantity of unclassified excavation shall be estimated by the Engineer . The Engineer's calculations shall be considered the definitive determinant for quantities for final payment. All topographic surveying and calculations necessary to quantify payment quantities for Unclassified Excavation shall be performed by the Engineer.

**Bid Item No. 9**

**Concrete Sidewalk:** Payment for “Concrete Sidewalk” shall be measured and paid for on a cubic yard basis and shall include full compensation for all labor, materials, tools, equipment, including but not limited to; saw cutting, removal & disposal of existing materials, forming, compaction, joints, and all related incidentals required to complete the work in place. Payment shall also include the repair or replacement of landscaping, irrigation, or other private improvements adjacent to areas of work.

**Bid Item No. 10**

**Concrete Driveway:** Payment for “Concrete Driveway” shall be measured and paid for on a cubic yard basis and shall include full compensation for all labor, materials, tools, equipment, including but not limited to; saw cutting, removal & disposal of materials, dowels, forming, compaction, adjacent asphalt paving and all related incidentals required to complete the work in place.

**Bid Item No. 11**

**Concrete Curb Ramp:** Payment for “Concrete Curb Ramp” shall be measured and paid for on a cubic yard basis and shall include full compensation for all labor, materials, tools, equipment, including but not limited to; saw cutting, removal & disposal of materials from PCR to PCR, forming, compaction, welded wire fabric, adjacent asphalt paving, truncated domes, curbs and all related incidentals required to complete the work in place. Payment shall also include the adjustment of existing boxes, repair or replacement of landscaping, irrigation, or other private improvements adjacent to the work.

**Bid Item No. 12**

**Concrete Cross Gutter:** Payment for “Concrete Cross Gutter” shall be measured and paid for on a cubic yard basis and shall include full compensation for all labor, materials, tools, equipment, including but not limited to; saw cutting, removal & disposal of materials, dowels, forming, compaction, reinforcing steel, adjacent asphalt paving and all related incidentals required to complete the work in place as shown.

**Bid Item No. 13**

**Concrete Curb and Gutter:** Payment for “Concrete Curb and Gutter” shall be measured and paid for on a linear foot basis and shall include full compensation for all labor, materials, tools, equipment, including but not limited to; saw cutting, removal & disposal of existing materials,

forming, compaction, adjacent asphalt paving and all related incidentals required to complete the work in place.

**Bid Item No. 14**

**Asphalt Concrete Dike:** Payment for “Asphalt Concrete Dike” shall be measured and paid for on a linear foot basis and shall include full compensation for all labor, materials, tools, equipment, including but not limited to; saw cutting, removal & disposal of existing materials, forming, compaction, adjacent asphalt paving and all related incidentals required to complete the work in place.

**Bid Item No. 15**

**Cold Mill Asphalt Concrete:** Payment for “Cold Mill Asphalt Concrete” shall be measured and paid for on a square yard basis and shall include full compensation for cold milling, removal of asphalt concrete and slurry seal material from adjacent concrete gutters, construction and removal of pavement transitions, disposal of millings, and all other necessary work.

**Bid Item No. 16**

**Gravity Retaining Wall – Type A:** Payment for “Gravity Retaining Wall – Type A” shall be measured and paid for on a cubic yard basis per the type shown on the plans and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to install the gravity retaining walls as shown on the Plans and Bid Schedule. This item shall include all costs for the excavation, forming, compaction, installation, removal and disposal of materials, and all related incidentals required to complete the work in place.

**Bid Item No. 17**

**Gravity Retaining Wall – Type C:** Payment for “Gravity Retaining Wall – Type C” shall be measured and paid for on a cubic yard basis per the type shown on the plans and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to install the gravity retaining walls as shown on the Plans and Bid Schedule. This item shall include all costs for the excavation, forming, compaction, installation, removal and disposal of materials, and all related incidentals required to complete the work in place.

**Bid Item No. 18**

**Porous Sidewalk:** Payment for “Porous Sidewalk” shall be measured and paid for on a square foot basis and shall include full compensation for all labor, materials, tools, equipment, including but not limited to; excavation, grading, backfill, saw cutting, removal & disposal of existing materials, forming, compaction, joints, bases, screeding courses, reservoir courses, liners, expansion joints, and all related incidentals required to complete the work in place. Payment shall also include the repair or replacement of landscaping, irrigation, or other private improvements adjacent to areas of work.

**Bid Item No. 19**

**Salvage and Relocate Mailbox:** Payment for “Salvage and Relocate Mailbox” shall be measured and paid for on an each basis and shall include full compensation for furnishing all labor,

materials, tools and incidentals necessary to salvage, relocate, and reuse the existing site furnishing as shown on the Plans.

**Bid Item No. 20**

**18" RCP (1350-D):** Payment for "18" RCP (1350-D)" will be made at the Contract Unit Price per linear foot. The Contract Unit Price shall include payment for:

- All wyes, tees, bends, monolithic catch basin connections, and specials as shown on the Plans
- Removal of interfering portions of existing pipelines, sewers, storm drains, and improvements
- Closing or removing of abandoned conduit and structures
- Trench excavation
- Disposal of excess excavation
- Control of surface waters
- Preparation of subgrade
- Placing and joining pipe or box culvert
- Erection and removal of forms
- Reinforcing steel
- Pressure testing
- Disinfection sample collection and delivery
- Backfilling the trench
- Permanent resurfacing
- Trench shoring and plans, excluding engineered shoring and engineered shoring plans
- All other Work (excluding temporary resurfacing) necessary to install the pipe, conduit, or box culvert, complete in-place

No separate or additional payment shall be made for additional bedding or a higher strength of pipe necessitated by the Contractor exceeding the maximum trench width, unless a bid item has been provided.

**Bid Item No. 21**

**36" RCP (1350-D):** Payment for "36" RCP (1350-D)" will be made at the Contract Unit Price per linear foot. The Contract Unit Price shall include payment for:

- All wyes, tees, bends, monolithic catch basin connections, and specials as shown on the Plans
- Removal of interfering portions of existing pipelines, sewers, storm drains, and improvements
- Closing or removing of abandoned conduit and structures
- Trench excavation
- Disposal of excess excavation
- Control of surface waters
- Preparation of subgrade
- Placing and joining pipe or box culvert
- Erection and removal of forms
- Reinforcing steel
- Pressure testing



- Disinfection sample collection and delivery
- Backfilling the trench
- Permanent resurfacing
- Trench shoring and plans, excluding engineered shoring and engineered shoring plans
- All other Work (excluding temporary resurfacing) necessary to install the pipe, conduit, or box culvert, complete in-place.

No separate or additional payment shall be made for additional bedding or a higher strength of pipe necessitated by the Contractor exceeding the maximum trench width, unless a bid item has been provided.

**Bid Item No. 22**

**Straight Headwall:** Payment for “Straight Headwall” shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment necessary to construct the headwall as shown on the plans and in the Bid Schedule. Payment shall also include excavation, fill, grading, compaction, disposal of excess material, forming, connections to the storm drain, and all related incidentals required to complete the work in place.

**Bid Item No. 23**

**Biofiltration BMP:** Payment for “Biofiltration BMP” shall be measured and paid for on a square foot basis and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to install the biofiltration BMPs as shown in the Plans and the Bid Schedule. This item shall include all costs associated with excavation, compaction, gravel, engineered soil media (supplying, testing, amending, mixing and installing various planting soil categories for use in stormwater management and horticultural plantings), choker layer, shredded hardwood mulch, 30 mil impermeable liner, splash pads, concrete check dams, curb cuts, and all other related items necessary to complete the work in place that do not have a unique bid item.

**Bid Item No. 24**

**8” PVC (Perforated):** Payment for “8” PVC (Perforated)” will be made at the Contract Unit Price per linear foot. The Contract Unit Price shall include payment for:

- All wyes, tees, bends, monolithic catch basin connections, and specials as shown on the Plans
- Removal of interfering portions of existing pipelines, sewers, storm drains, and improvements
- Closing or removing of abandoned conduit and structures
- Trench excavation
- Disposal of excess excavation
- Control of surface waters
- Preparation of subgrade
- Placing and joining pipe or box culvert
- Erection and removal of forms
- Reinforcing steel
- Pressure testing
- Disinfection sample collection and delivery

- Backfilling the trench
- Permanent resurfacing
- Trench shoring and plans, excluding engineered shoring and engineered shoring plans
- All other Work (excluding temporary resurfacing) necessary to install the pipe, conduit, or box culvert, complete in-place

No separate or additional payment shall be made for additional bedding or a higher strength of pipe necessitated by the Contractor exceeding the maximum trench width, unless a bid item has been provided.

**Bid Item No. 25**

**8" PVC (Non-Perforated):** Payment for "8" PVC (Non-Perforated)" will be made at the Contract Unit Price per linear foot. The Contract Unit Price shall include payment for:

- All wyes, tees, bends, monolithic catch basin connections, and specials as shown on the Plans
- Removal of interfering portions of existing pipelines, sewers, storm drains, and improvements
- Closing or removing of abandoned conduit and structures
- Trench excavation
- Disposal of excess excavation
- Control of surface waters
- Preparation of subgrade
- Placing and joining pipe or box culvert
- Erection and removal of forms
- Reinforcing steel
- Pressure testing
- Disinfection sample collection and delivery
- Backfilling the trench
- Permanent resurfacing
- Trench shoring and plans, excluding engineered shoring and engineered shoring plans
- All other Work (excluding temporary resurfacing) necessary to install the pipe, conduit, or box culvert, complete in-place

**Bid Item No. 26**

**Curb Outlet:** Payment for "Curb Outlet" shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to install standard and modified concrete curb outlets at the size and type indicated in the Plans and the Bid Schedule. This item shall include all costs for the installation, forming, removal and disposal of materials as necessary, and all related incidentals required to complete the work in place.

**Bid Item No. 27**

**Curb Inlet – Type B L(L=5’):** Payment for "Curb Inlet – Type B (L=5’)" shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to install standard and modified concrete curb inlets at the size and

type indicated in the Plans and the Bid Schedule. This item shall include all costs for the installation, forming, removal and disposal of materials as necessary, connections to the storm drain conduits, curb inlet stenciling, and all related incidentals required to complete the work in place.

**Bid Item No. 28**

**Curb Inlet – Type B-2 (L=11’):** Payment for “Curb Inlet – Type B (L=11’)” shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to install standard and modified concrete curb inlets at the size and type indicated in the Plans and the Bid Schedule. This item shall include all costs for the installation, forming, removal and disposal of materials as necessary, connections to the storm drain conduits, curb inlet stenciling, and all related incidentals required to complete the work in place.

**Bid Item No. 29**

**Storm Drain Cleanout Type A:** Payment for “Storm Drain Cleanout Type A” shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to install cleanouts at the size and type indicated in the Plans and the Bid Schedule. This item shall include all costs for the installation, forming, removal and disposal of materials as necessary, connections to the storm drain conduits, covers, and all related incidentals required to complete the work in place.

**Bid Item No. 30**

**24” x 24” Cleanout:** Payment for “24” x 24” Cleanout” shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to install cleanouts at the size and type indicated in the Plans and the Bid Schedule. This item shall include all costs for the installation, forming, removal and disposal of materials as necessary, connections to the storm drain conduits, covers, and all related incidentals required to complete the work in place.

**Bid Item No. 31**

**8” Subdrain Cleanout:** Payment for “8” Subdrain Cleanout” shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools and incidentals necessary but not limited to; backfill, compaction, installation of cleanout including wyes and jointing, pipe risers, elbows, gaskets, frames and covers or screw caps, and concrete encasements, and all related and appurtenant work to complete in place.

**Bid Item No. 32**

**8” Overflow Riser Cleanout:** Payment for “8” Overflow Riser Cleanout” shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools and incidentals necessary but not limited to; backfill, compaction, installation of cleanout including wyes and jointing, pipe risers, elbows, gaskets, frames and covers or screw caps, and concrete encasements, and all related and appurtenant work to complete in place.

**Bid Item No. 33**

**Observation Well:** Payment for “Observation Well” shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools and incidentals necessary but not limited to; backfill, compaction, installation of observation well including wyes and jointing, pipe risers, elbows, gaskets, frames and covers or screw caps, and concrete encasements, and all related and appurtenant work to complete in place.

**Bid Item No. 34**

**Structural Excavation (Retaining Wall):** Payment for “Structure Excavation (Retaining Wall)” will be made at the unit price per cubic yard. Only the quantity of structure excavation and over-excavation required for the retaining wall shall be paid for. No excavated material which is re-excavated will be paid for. Payment shall include costs of surveying, staking, preparation of earthwork quantity reports, temporary shoring, placement, compaction, soil remediation, moisture adjustment and water therefor, rework of compressible soils, slope rounding, grading, stockpiling, access road, temporary detour roads, earthen swales and drainage channels as shown on the drawings or required by the contract documents.

**Bid Item No. 35**

**Structure Backfill (Retaining Wall):** Payment for “Structure Backfill (Retaining Wall)” will be made at the unit price per cubic yard. Only the quantity of structure backfill required for the construction of the retaining wall shall be paid for. The unit price bid shall include full compensation for furnishing all labor, materials, tools, equipment, hauling, excavation, removal and disposal of surplus materials, compaction, furnishing and installing geocomposite drain systems, and all related and appurtenant work to complete the work in place.

**Bid Item No. 36**

**Structure Concrete, Retaining Wall:** Payment for “Structure Concrete, Retaining Wall” shall be measured and paid for on a cubic yard basis and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to install the retaining wall as shown on the Plans and Bid Schedule. This item shall include all costs for the forming, compaction, installation, removal and disposal of materials, furnishing and installing expansion joint material and waterstops, and all related incidentals required to complete the work in place.

**Bid Item No. 37**

**Bar Reinforcing Concrete, Retaining Wall:** Payment for “Bar Reinforcing Concrete, Retaining Wall” shall be made at the unit price per pound and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to furnish and install the bar reinforcing steel for the retaining wall as shown on the Plans and Bid Schedule. Only the quantity of bar reinforcing steel required for the construction of the retaining wall shall be paid for.

**Bid Item No. 38**

**Stained Concrete Surfacing:** Payment for “Stained Concrete Surfacing” shall be measured and paid for on a square foot basis and shall include full compensation for all labor, materials,



equipment, tools, and incidentals necessary to furnish and apply the anti-graffiti coating, as shown on the Plans and Bid Schedule.

**Bid Item No. 39**

**Anti-Graffiti Coating:** Payment for “Anti-graffiti Coating” shall be measured and paid for on a square foot basis and shall include full compensation for all labor, materials, equipment, tools, and incidentals necessary to furnish and apply the anti-graffiti coating, as shown on the Plans and Bid Schedule.

**Bid Item No. 40**

**Black Vinyl Coated Chain Link Railing:** Payment for “Black Vinyl Coated Chain Link Railing” shall be measured and paid for on a linear foot basis shall be measured parallel to the ground along the line of the completed fence. Payment shall include all labor, material, equipment, tools and incidentals necessary including but not limited to; clearing the line and grade for the fence, disposal of material, excavation, vinyl coating, connections to existing fences and/or structures, and all related incidentals required to complete the work in place.

**Bid Item No. 41**

**Striping and Markings:** Payment for “Striping and Markings” shall be made at the contract lump sum price for thermoplastic traffic striping and pavement markings as shown on the Plans and required by the Specifications and no additional compensation will be allowed, therefore. The lump sum Bid shall include all labor, tools, equipment, materials, and incidentals for doing all Work in installing the final traffic striping.

**Bid Item No. 42**

**Striping Removal:** Payment for removal of traffic striping, curb markings, and pavement markers as shown on the plans and required by the specifications shall be included in the lump-sum price bid for “Striping Removal”, and no additional compensation will be allowed therefor. The lump sum prices bid shall include all labor, tools, equipment, materials, and incidentals for doing all work for the removal of traffic striping, pavement markings, and pavement markers.

**Bid Item No. 43**

**Signing:** Permanent signing and appurtenances shall be made at the contract lump sum price for "Signing" and payment therefore shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in supplying and installing permanent signing and appurtenances, to relocate roadside signs, and to remove roadside signs, complete in place, as shown on the plans, as specified in the Standard Specification and these special provisions, and as directed by the Engineer.

**Bid Item No. 44**

**Adjust Water Meter to Grade:** Payment for “Adjust Water Meter to Grade” shall be measured and paid for an each basis and shall include full compensation for all labor, materials, equipment, tools and incidentals to adjust the water meter in place as shown on the Plans. Payment shall include the service tap, corporation stop, lateral, riser, angle meter valve, service saddle, meter

installation, meter box or vault, meter box lid, appurtenant couplings, and all other service materials required to complete the work as shown on the Plans.

**Bid Item No. 45**

**Install 2" Water Service:** Payment for "Install Water Service" shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools and incidentals to install the water service in place as shown on the Plans. Payment shall include all piping, wires, outlets, meter stops, meter boxes, elbows, valves and all other service materials required to complete the work as shown on the Plans.

**Bid Item No. 46**

**Install 2" Air-Vacuum Valve Assembly and Appurtenance:** Payment for "Install 2" Air-Vacuum Valve Assembly and Appurtenance" shall be measured and paid for on an each basis and shall include full compensation for all labor, materials, equipment, tools and incidentals to install the air-vacuum assemble and appurtenance in place as shown on the Plans.

**Bid Item No. 47**

**Lighting System:** Payment for "Lighting System" shall be made at the contract lump sum price for all components of the lighting system as shown on the Plans and required by the Specifications and no additional compensation will be allowed, therefore. The lump sum Bid shall include all labor, tools, equipment, materials, potholing, and incidentals for doing all Work in installing the lighting system and coordinating energizing with SDGE.

**Bid Item No. 48**

**Traffic Signal:** Payment for "Traffic Signal" shall be made at the contract lump sum price for all components of the traffic signal system as shown on the Plans and required by the Specifications and no additional compensation will be allowed, therefore. The lump sum Bid shall include all labor, tools, equipment, materials, potholing, and incidentals for doing all Work in installing the lighting system coordinating energizing with SDGE.

**Bid Item No. 49**

**Irrigation:** Payment for "Irrigation" shall be made at the contract lump sum price for all components of the irrigation system as shown on the Plans and required by the Specifications and no additional compensation will be allowed, therefore. The lump sum Bid shall include all labor, tools, equipment, materials, and incidentals for doing all Work in installing the irrigation system and tying into existing waterline as shown on the improvement plans.

**Bid Item No. 50**

**Planting:** Payment for "Planting" shall be made at the contract lump sum price for all components of the planting as shown on the Plans and required by the Specifications and no additional compensation will be allowed, therefore. The lump sum Bid shall include all labor, tools, equipment, materials, and incidentals for doing all Work in installing the planting.

**Bid Item No. 51**

**Initial 120 Day Maintenance:** Payment for “Initial 120 Day Maintenance” shall be made at the contract lump sum price for all components of the 120 day maintenance as shown on the Plans and required by the Specifications and no additional compensation will be allowed, therefore. The lump sum Bid shall include all labor, tools, equipment, materials, and incidentals for doing all Work for the 120 day maintenance.

**Bid Item No. 52**

**Tree Removal, Stump Grinding, and Disposal:** Payment for removal of approximately ten (10) large mature eucalyptus trees along golf course and two (2) trees near Sunny Creek Road shall be measured and paid on an each basis and shall include full compensation for all labor, materials, equipment, tools and incidentals to remove, grinding of the stumps, and disposal as shown on the Plans. Payment is for all trees in cluster at station 415+50, a few at station 412+20, one at station 406+60, and one at station 404+40 for approximately twelve (12) trees. Payment is also to clear miscellaneous debris of existing logs and branches around station 412+50 in existing right-of-way. To be coordinated with Inspector and/or Engineer.

**Bid Item No. 53**

**Slurry Seal:** Payment for the contract unit price of square yard paid for this bid item shall constitute full compensation for polymer modified, type 2 slurry seal conforming to the requirements of Sections 203-3 and 302-4 of the Standard Specifications. Type II slurry seal will be placed in vehicular travel lanes as illustrated on the project Plans and as described in these Special Provisions. No additional compensation shall be allowed. This Bid shall include all labor, tools, equipment, materials, preparation and incidentals for doing all Work in installing slurry, including any crack fill or removal of existing striping and thermoplastic.

## SECTION 8 – FACILITIES FOR AGENCY PERSONNEL

8-1 GENERAL.

**END OF SECTION**

## 00 74 00 AGENCY SUPPLEMENTAL PROVISIONS TO GREENBOOK

### INTRODUCTION

The Specifications contained in this 00 7400 Agency Supplemental Technical Provisions take precedence over the specification language contained in the Standard Specifications for Public Works Construction, "The Greenbook" latest edition and all errata. This specification addresses the unique conditions in Carlsbad that are not addressed in The Greenbook. Therefore, if there is a conflict, these Specifications shall control.

The Greenbook may be purchased at Bidder/Contractors local technical bookstore or directly from the publisher. These Agency Supplemental General Provisions are available only for download from the online bidding portal with Contract Documents. The Agency does not provide hard copies.

When used in the Contract Documents, statements or command phrases (active voice and imperative mood) refer to and are directed at the "Bidder" or "Contractor" as applicable. The Specifications are written to the "Bidder" before award and the "Contractor" after award. Before award, interpret sentences written in the imperative mood as starting with "The Bidder shall." Interpret the term "you" as "the Bidder" and interpret the term "your" as "the Bidder's." After award, interpret sentences written in the imperative mood starting with "The Contractor shall." Interpret the term "you" as "the Contractor" and interpret the term "your" as "the Contractor's."

## PART 2 CONSTRUCTION MATERIALS

### SECTION 200 – ROCK MATERIALS

#### 200-2 UNTREATED BASE MATERIALS.

##### 200-2.1 General.

ADD the following:

1. Aggregate base shall be Class 2 Aggregate Base per Caltrans Standard Specification, 2018, Section 26: Aggregate Bases, Subsection 26-1.02A Class 2 Aggregate Base and as specified herein.

##### 200-2.2 Crushed Aggregate Base.

###### 200-2.2.1 General.

ADD the following:

Crushed Aggregate Base shall be free from organic matter and other deleterious substances and shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base.

1. The aggregate shall not be treated with lime, cement or other chemical material before tests are performed.



2. Samples for testing shall represent every 500 cubic yards or one day's production, whichever is smaller. If the results of the aggregate grading tests do not meet the requirements for Percentage Passing Sieve as specified in Table 200-2.2.2, but meet the Quality Requirements as specified in Table 200-2.2.3, placement of the aggregate base may be continued for the remainder of that day. However, another day's Work may not be started until test results indicate to the satisfaction of the Engineer that the next material to be used in the Work will comply with the requirements specified for Percentage Passing Sieve.
3. If the results of both the aggregate grading and Sand Equivalent tests do not meet the requirements of Section 200-2.2, the aggregate base which is represented by these tests shall be removed. However, if requested by the Contractor, and approved at the sole discretion of the Engineer, the aggregate base may remain in place and the Contractor shall pay to the Agency \$50 per cubic yard for such aggregate base left in place. The Agency may deduct this amount from any moneys due, or that may be come due, to the Contractor under the Contract.

ADD the following:

**200-2.9 - Class 2 Aggregate Base.**

Aggregate for Class 2 aggregate base shall be free from organic matter and other deleterious substances and shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base. Aggregate may include material processed from reclaimed asphalt concrete, portland cement concrete, lean concrete base, cement treated base or a combination of any of these materials.

Aggregate shall conform to the grading and quality requirements shown in the following tables. At the option of the Contractor, the grading for either the 1 1/2-inch maximum or 3/4 inch maximum shall be used, except that once a grading is selected it shall not be changed without the Engineer's written approval.

**AGGREGATE GRADING REQUIREMENTS**

Sieve Sizes	Percentage Passing	
	1 1/2" Maximum	3/4" Maximum
	Operating Range	Operating Range
2" .....	100	—
1 1/2" .....	90-100	—
1" .....	—	100
3/4" .....	50-85	90-100
No. 4 .....	25-45	35-60
No. 30 .....	10-25	10-30
No. 200 .....	2-9	2-9

**QUALITY REQUIREMENTS**

Tests	Operating Range
Resistance (R-value)	78 Min.
Sand Equivalent	25 Min.
Durability Index	35 Min.

The aggregate shall not be treated with lime, cement or other chemical material before the Durability Index test is performed.

If the results of either or both the aggregate grading and Sand Equivalent tests do not meet the requirements specified for “Operating Range” but meet the “Contract Compliance” requirements, placement of the aggregate base may be continued for the remainder of that day. However, another day's work may not be started until tests, or other information, indicate to the satisfaction of the Engineer that the next material to be used in the work will comply with the requirements specified for “Operating Range”.

If the results of either or both the aggregate grading and Sand Equivalent tests do not meet the requirements specified for “Contract Compliance,” the aggregate base which is represented by these tests shall be removed. However, if requested by the Contractor and approved by the Engineer, the aggregate base may remain in place and the Contractor shall pay to the City \$2.25 per cubic yard for such aggregate base left in place. The City may deduct this amount from any moneys due, or that may become due, the Contractor under the contract. If both the aggregate grading and Sand Equivalent do not conform to the “Contract Compliance” requirements, only one adjustment shall apply.

No single aggregate grading or Sand Equivalent test shall represent more than 500 cubic yards or one day's production, whichever is smaller.

## SECTION 201 – CONCRETE, MORTAR AND RELATED MATERIALS

### 201-1 PORTLAND CEMENT CONCRETE.

TABLE 201-1.1.2 Modify as follows:

**TABLE 201-1.1.2  
PORTLAND CEMENT CONCRETE**

Type of Construction	Concrete Class	Maximum Slump (Inches)
All Concrete Used Within the Right-of-Way	560-C-3250 <sup>(1)</sup>	<sup>(2)</sup>
Trench Backfill Slurry	190-E-400	8”
Street Light Foundations and Survey Monuments	560-C-3250	4”
Traffic Signal Foundations	650-CW-4000	4”
Concreted-Rock Erosion Protection	520-C-2500P	per Table 300-11.3.2

(1) Except that concrete required to be of higher strength by Table 201-1.1.2 SSPWC shall be as per Table 201-1.1.2 SSPWC.

(2) As per Table 201-1.1.2 SSPWC.

#### 201-1.2.1 Cement. Substitute the following:

- a) **Portland Cement.** Portland Cement shall be Type II or V Portland cement conforming to ASTM C150 and the optional requirements of ASTM C150, Table 2 for maximum equivalent alkalis (Na<sub>2</sub>O + 0.658K<sub>2</sub>O) of 0.60 percent.

## SECTION 203 – BITUMINOUS MATERIALS

### 203-6 ASPHALT CONCRETE.

#### 203-6.1 General.

DELETE in its entirety and REPLACE with the following:

Asphalt Concrete (AC) for patches shall be Type III-C2-PG 64-10-R0. No recycled asphalt pavement (RAP) shall be used in the AC mix used for patching.

Asphalt Concrete for full width overlay shall be Type III-C2-PG 64-10. Asphalt Concrete in base course, if necessary or required by the City Inspector, shall be Type III-B2-PG 64-10.

Unless otherwise specified in the Special Provisions or shown on the Plans, asphalt concrete mixtures shall conform to 203-6.4.

#### 203-6.3 Job Mix Formula (JMF) and Mix Designs.

##### 203-6.3.1 General.

DELETE in its entirety and REPLACE with the following:

1. The Contractor shall submit in accordance with 3-8.4 a JMF that summarizes each asphalt concrete mix design for each class and grade of asphalt concrete required to construct the Work. Supporting information for the WMA technology and/or recycling agent, if included in a mixture, shall also be submitted.
2. The JMF shall identify the source and the individual grading of each material used to produce the mix design (including the percentage and individual gradation of any manufactured or natural sands), the combined gradation, the OBC, void content, RAP percentage, RAP gradation, RAP binder content, stability value, plant identification, mix number, WMA technology, and the source and performance grade of the paving asphalt. The mix design test data represented by the JMF shall be submitted to the Engineer with the JMF.
3. When greater than 20 percent RAP is to be included in a mixture, a mix design shall be submitted. The submittal shall include supporting information showing the viscosity of the individual binders (both the virgin paving asphalt grade and that of the binder recovered from the RAP); and the amount of recycling agent, if any, and the blended final viscosity in accordance with AASHTO M323.
4. For all mixtures, the asphalt binder content shall be defined as the total bituminous material present in the mix consisting of the blend of virgin paving asphalt, residual paving asphalt from RAP, and recycling agent.
5. When a mix design is more than 30 Calendar Days old, the JMF must indicate that the combined gradation is  $\pm 3$  percent from the referenced mix design based on a 30-day moving average or a minimum of the 10 most current results. If the combined aggregate gradation is not within  $\pm 3$  percentage points of the gradation shown on the referenced mix design on any sieve, if the source of any aggregate is changed, the performance grade or source of paving asphalt is changed, the grade or source of any other component of asphalt concrete is changed, or the mix design is over 1 year old, a new mix design shall be prepared and a new JMF.

6. The following asphalt concrete mixtures shall be used for the following uses.
  - a. Surface Course – III-C2-PG 64-10
  - b. Base Course – III-B2-PG 64-10
  - c. AC Dikes and Berms - D2-PG 70-10
  - d. AC Ditches – E-PG 70-10
  - e. Trench Repair – III-C2-PG 64-10

**203-6.3.2 Hveem Mix Design Method.**

DELETE the fourth paragraph and REPLACE with the following:

1. Unless viscosity and blending charts developed in accordance with AASHTO M323 show otherwise, mix designs for mixtures containing more than 20 percent RAP shall drop the high temperature requirement of the virgin paving asphalt by one performance grade and drop the low temperature requirement by a minimum of one performance grade, e.g., a specified "PG 64-10" shall become a "PG 58-22 or "PG 58-16".

**203-6.4.4 Composition and Grading.**

ADD the following:

Table 203-6.4.4, design criteria, shall be modified per the following table, the gradation shall stay the same:

**Table 203-6.4.4 – Modified (Design Criteria)**

Sieve Size	Percentage Passing Sieves							
	A	B	C1	C2	D1	D2	E	F
	Dense Coarse	Dense Medium Coarse	Coarse Medium	Dense Medium	Coarse Fine	Dense Fine	Extra Fine	Channel Liner
1-1/2" (37.5 mm)	100							
1" (25 mm)	90-100	100						
¾" (19.0 mm)	78-90	87-100	100	100				
½" (12.5 mm)	64-78	70-87	90-100	95-100	100	100		
3/8" (9.5 mm)	54-68	55-76	72-88	72-88	90-100	95-100	100	100
No. 4 (4.75 mm)	34-48	35-52	40-54	46-60	40-54	58-72	65-85	95-100
No. 8 (2.36 mm)	25-35	22-40	18-34	28-42	20-32	34-48	45-65	70-84
No. 30 (600 µm)	12-22	8-24	8-20	15-27	6-18	18-32	22-38	36-50
No.50 (300 µm)	8-16	5-18	4-14	10-20	2-12	13-23	16-28	23-35
No. 200 (75 µm)	3-6	0-7	1-6	2-7	0-5	2-9	6-12	6-12
Asphalt Binder %	4.5-6.0	4.7-6.5	5.0-6.5	5.0-6.5	5.3-7.0	5.3-7.0	6.0-8.0	8.0-10.0
Hveem Stability "S Value" (min.)	37	37	35	35	32	32		
Air Voids <sup>1</sup>	4%	4%	4%	4%	4%	4%		

**203-6.5.1 Class and Grade.**

DELETE the list and REPLACE with the following:

- a) No suffix if the mixture contains RAP in an amount up to 20 percent.



- b) "R0" if the mixture does not contain RAP, e.g., "III-C2-PG 64-10-R0".
- c) "R" and the percentage of RAP if the mixture contains greater than 20 percent, e.g. "III-C2-PG 64-10-R25".
- d) "WMA" if the mixture uses a warm mix asphalt technology, e.g., "III-C2-PG 64-10-WMA".

203-6.5.4 Table.

DELETE in its entirety and REPLACE with the following:

<b>CLASS</b>	<b>B2</b>		<b>B3</b>	
<b>Sieve Size</b>	<b>Individual Test Result</b>	<b>Moving Average</b>	<b>Individual Test Result</b>	<b>Moving Average</b>
1" (25.0 mm)	100	100	100	100
3/4" (19.0 mm)	87-100	90-100	90-100	95-100
3/8" (9.5 mm)	50-80	60-75	60-84	65-80
No. 4 (4.75 mm)	30-60	40-55	40-60	45-60
No. 8 (2.36 mm)	22-44	27-40	24-50	30-45
No. 30 (600 µm)	8-26	12-22	11-29	15-25
No. 200 (75 µm)	1-8	3-6	1-9	3-7
Asphalt Binder %	4.8-6.5		4.8-6.5	
Air Voids %	4%		4%	
<b>CLASS</b>	<b>C2</b>		<b>C3</b>	
<b>Sieve Size</b>	<b>Individual Test Result</b>	<b>Moving Average</b>	<b>Individual Test Result</b>	<b>Moving Average</b>
3/4" (19.0 mm)	100	100	100	100
1/2" (12.5 mm)	89 -100	95 -100	89 -100	95 - 100
3/8" (9.5 mm)	70-94	75-90	74 -100	80-95
No. 4 (4.75 mm)	44-72	50-67	50- 78	55-72
No. 8 (2.36 mm)	30-54	35-50	32-60	38-55
No. 30 (600 µm)	10-34	15 - 30	14 - 38	18 - 33
No. 200 (75 µm)	2-10	4-7	2-10	4-8
Asphalt Binder %	5.0 - 6.8		5.0 - 7.0	
Air Voids %	4%		4%	
<b>CLASS</b>	<b>D</b>		<b>F</b>	
<b>Sieve Sizes</b>	<b>Combined Average</b>		<b>Combined Average</b>	
1/2" (12.5 mm)	100		-	
3/8" (9.5 mm)	95-100		100	
No. 4 (4.75 mm)	65-85		95-100	
No. 8 (2.36 mm)	50-70		70-80	
No. 30 (600 µm)	28-40		35-50	
No. 200 (75 µm)	5-14		7-16	
Asphalt Binder %	6.0-8.0		8.0-10.0	
Air Voids	4%			

### 203-6.8 Storage.

DELETE in its entirety and REPLACE with the following:

1. Storage of asphalt concrete shall not be allowed. Asphalt concrete shall be transferred from the mixer by a method that does not cause segregation.

### 203-6.10 Sampling.

DELETE in its entirety and REPLACE with the following:

1. Aggregate samples for batch plants shall be taken from the hot bins. Aggregate samples for dryer-drum plants shall be taken in advance of the dryer-drum using devices conforming to 203-6.7.4.2.
2. Evaluation and acceptance of asphalt concrete shall be determined from samples of final asphalt concrete material. In addition to evaluation of the final asphalt material, samples of aggregate, RAP, and asphalt binder shall be taken for testing. In case of dispute between the Contractor and the Agency, the Engineer has the authority to request core samples for analysis from the placed asphalt concrete for any of the acceptance criteria, at the locations determined by the Engineer. All samples shall be taken in accordance with California Test 125, and the following table:

**TABLE 203-6.10**

<b>Sampling</b>	<b>Location</b>
Asphalt Concrete	<ul style="list-style-type: none"><li>• Trucks, or</li><li>• Mat behind the paver</li></ul>
Aggregate	<ul style="list-style-type: none"><li>• Cold feed belts, or</li><li>• Hot bins prior to addition of asphalt binder</li></ul>
RAP	<ul style="list-style-type: none"><li>• RAP system, or</li><li>• RAP feed belts</li></ul>
Asphalt Binder	<ul style="list-style-type: none"><li>• Asphalt binder supplier, or</li><li>• Storage tanks at the plant during production</li></ul>

3. When behind the paver or core samples of asphalt concrete are to be used for evaluation, sufficient size samples shall be taken to ensure representative and adequate quantity of material for the required testing.
4. When using core samples, the samples must be properly prepared to safeguard against influx of outside contaminants and so that the cut surfaces do not influence the test results.
5. Material samples of the asphalt concrete shall be on a lot basis. A standard lot shall be equal to 1 day's production or 750 tons, whichever is smaller. The samples and testing results shall be representative of their entire sample lot.

### 203-6.11 Acceptance.

DELETE in its entirety and REPLACE with the following:

1. Acceptance of asphalt concrete mixtures will be based upon conformance to the gradation, asphalt binder content, air voids, and minimum stability values shown in Table 203-6.4.4. Air

void values shall be between 2% and 6%. The asphalt binder content shall be within +/- 0.4 percent of the OBC shown on the respective job mix formula.

2. Acceptance of Type III asphalt concrete mixtures will be based upon conformance to the gradation, asphalt binder content, air voids, and minimum stability values shown in Tables 203-6.5.4 (A) and 203-6.5.4 (B). Air void values shall be between 2% and 6%. The asphalt binder content shall be within +/- 0.4 percent of the OBC shown on the respective job mix formula.
3. Should plant gradation test results be unavailable and allowed by the Engineer, gradation may be determined in accordance with ASTM D2172 or by AASHTO T 308 with adherence to the aggregate correction factor therein. In the case of a continued dispute, final acceptance of plant produced mixtures may be based upon binder content, stability and air void values.
4. When dissimilar surface course mix characteristics are the result of production and delivery from multiple plants, the Engineer may require production and delivery from only 1 plant during any 1 day of production, unless approved by the Engineer.

#### 203-11 ASPHALT RUBBER HOT MIX (ARHM).

##### 203-11.3 Composition and Grading.

Delete row 10 of TABLE 203-11.3 and REPLACE with the following:

1. Asphalt Rubber Binder, % by Weight of Dry Aggregate<sup>1</sup> | 7.5-8.5 | 7.5-8.8 | 7.8-9.

ADD the following:

##### 203-11.10 Acceptance.

1. Acceptance of asphalt rubber hot mixes will be based upon conformance to the gradation, asphalt binder content, air voids, and minimum stability values shown in Table 203-11.3. Air void values shall be within +/- 2 percent of the targeted value at the optimum binder content (OBC) shown on the respective job mix formula. The asphalt binder content shall be within +/- 0.4 percent of the OBC shown on the respective job mix formula.

#### 203-14 TIRE RUBBER MODIFIED ASPHALT CONCRETE (TRMAC).

##### 203-14.9 Acceptance.

DELETE in its entirety and REPLACE with the following:

1. Acceptance of dense-graded mixtures will be based upon conformance to the gradation, asphalt binder content, air voids, and minimum stability values shown in Table 203-6.4.4. Air void values shall be between 2% and 6%. The asphalt binder content shall be within +/- 0.4 percent of the OBC shown on the respective job mix formula.
2. Acceptance of gap-graded mixes will be based upon conformance to the gradation, air voids, and minimum stability requirements shown in Table 203-11.3. Air void values shall be within +/- 2 percent of the targeted value at the OBC shown on the respective job mix formula. Acceptance of gap-graded mixes will also be based upon conformance to the asphalt binder content shown in Table 203-14.4.4. The asphalt binder content shall be within +/- 0.4 percent of the OBC shown on the respective job mix formula.

3. Should plant gradation test results be unavailable and allowed by the Engineer, gradation may be determined in accordance with ASTM D2172 or by AASHTO T 308 with adherence to the aggregate correction factor therein. In the case of a continued dispute, final acceptance of plant produced mixtures may be based upon binder content, stability, and air void values.
4. When dissimilar surface course mix characteristics are the result of production and delivery from multiple plants, the Engineer may require production and delivery from only 1 plant during any 1 day of production, unless approved by the Engineer.

### 203-16 Polymer Modified Asphalt Concrete (PMAC).

#### 203-16.1 General.

DELETE in its entirety and REPLACE with the following:

1. PMAC shall be the product of mixing mineral aggregate and up to 15% RAP with polymer modified paving asphalt at a central mixing plant.

#### 203-16.3 Job Mix Formulas and Mix Designs.

ADD the following:

1. Contractor shall submit for approval an asphalt concrete mix design per Greenbook Section 203-6.3. The asphalt concrete mix design method shall be Hveem with the optimal binder content determined by California Test 367. The mix design shall conform to Greenbook Table 203-6.4.4 for gradation, and the above MODIFIED (DESIGN CRITERIA) table.

#### 203-16.4.3 Composition and Grading.

DELETE in its entirety and REPLACE with the following:

1. Composition and grading shall conform to 203-6.4.4.

#### 203-16.9 Acceptance.

DELETE in its entirety and REPLACE with the following:

1. Acceptance of asphalt concrete mixtures will be based upon conformance to the gradation, asphalt binder content, air voids, and minimum stability requirements shown in Table 203-6.4.4. Air void values shall be between 2% and 6%. The asphalt binder content shall be within +/- 0.4 percent of the OBC shown on the respective job mix formula.
2. Material samples of the asphalt concrete shall be on a lot basis. A standard lot shall be equal to 1 day's production or 750 tons, whichever is smaller. The samples and testing results shall be representative of their entire sample lot.
3. Should plant gradation test results be unavailable and allowed by the Engineer, gradation may be determined in accordance with ASTM D2172 or by AASHTO T 308 with adherence to the aggregate correction factor therein. In the case of a continued dispute, final acceptance of plant produced mixtures may be based upon binder content, stability, and air void values.
4. When dissimilar surface course mix characteristics are the result of production and delivery from multiple plants, the Engineer may require production and delivery from only 1 plant during any 1 day of production, unless approved by the Engineer.



## SECTION 206 – MISCELLANEOUS METAL ITEMS

ADD the following:

206-7 TRAFFIC SIGNS.

### 206-7.1 Roadside Signs.

1. This Work shall consist of furnishing and installing roadside signs in accordance with details shown on the Plans, the California Sign Specifications and these special provisions. Permanent and temporary signs shall be free from blemishes that may affect the serviceability and detract from the general sign color and appearance when viewing during daytime and nighttime from a distance of 25 feet. The face of each finished sign shall be uniform, flat, smooth, and free of defects, scratches, wrinkles, gel, hard spots, streaks, extrusion marks, and air bubbles. The front, back and edges of the sign panels shall be free of router chatter marks, burns, sharp edges, loose rivets, delaminated skins, excessive adhesive overspray, and aluminum marks.

#### 206-7.1.2 Sign Identification.

1. The following notation shall be placed on the lower right side of the back of each sign where the notation shall not be blocked by the sign post or frame:
  - A. **PROPERTY OF THE CITY OF CARLSBAD,**
  - B. Name of the sign manufacturer,
  - C. Month and year of fabrication,
  - D. Type of retroreflective sheeting, and
  - E. Manufacturer's identification and lot number of retroreflective sheeting.
2. The above notation shall be applied directly to the aluminum sign panels in 1/4-inch upper case letters and numerals by die-stamp and applied by similar method to the fiberglass reinforced plastic signs. Painting, screening, or engraving of the notation will not be allowed. The notation shall be applied without damaging the finish of the sign.

#### 206-7.1.3 Drawings.

1. Standard signs shall be as per the most recently approved California Sign Specifications. The date of approval shall be the date most closely preceding the date of manufacture of the sign(s) or the date of the "Notice to Proceed" of this Contract, whichever is most recent.

#### 206-7.1.4 Reflective Sheeting.

1. All advisory signs, warning signs and all regulatory signs shall be fabricated with Type IV prismatic sheeting (High Intensity Prismatic or equivalent) or Type IX prismatic cube lens sheeting (Diamond Grade VIP or equivalent) in accordance to ASTM Designation D4956 and conforming to the requirements of these special provisions.

#### 206-7.1.5 Sign Panel.

1. Sign panels shall be fabricated from sheet aluminum in accordance with ASTM Designation B209. Sheet aluminum shall be pretreated in accordance to ASTM Designation B449. The surface of sheet aluminum shall be cleaned, deoxidized, and coated with a light and tightly adherent chromate conversion coating free of powdery residue. The conversion coating shall be Class 2 with a mass between 10 milligrams per square foot. Following the cleaning and coating process, the sheet aluminum shall be protected from exposure to grease, oils, dust, and contaminants. Sheet aluminum shall be free of buckles, warps, dents, cockles, burrs, and defects resulting from fabrication.

#### 206-7.1.6 Mounting Traffic Signs.

1. Traffic signs shall be installed on 10-gage or 12-gage cold-rolled steel perforated tubing posts as shown on San Diego Regional Standard Drawing M-45 or, when the sign area exceeds the maximum area allowed for on that drawing, on multiple 10-gage or 12-gage cold-rolled steel perforated tubing posts. The number of posts shall be determined by the parameters in SDRS Drawing M-45 or as approved by the Engineer. Traffic signs will be provided with back braces and mounting blocks as approved by the Engineer consisting of 10-gage or 12-gage cold-rolled steel perforated tubing when multiple posts are used.

#### 206-7.1.6 Traffic Sign Posts.

1. Posts shall be constructed of 10-gage or 12-gage cold-rolled steel perforated tubing posts as shown on San Diego Regional Standard Drawing M-45.

#### 206-7.2 Temporary Traffic Signs.

1. Temporary traffic signs shall consist of all signs used for the direction, warning, and regulation of vehicle (including bicycle) and pedestrian traffic during the Contractor's performance of the Work. Temporary traffic signs include both stationary and portable signs.

##### 206-7.2.1 General.

1. This Work shall consist of furnishing and installing temporary signs in accordance with details shown on the Plans, the California Sign Specifications and these special provisions. Permanent and temporary signs shall be free from blemishes that may affect the serviceability and detract from the general sign color and appearance when viewing during daytime and nighttime from a distance of 25 feet. The face of each finished sign shall be uniform, flat, smooth, and free of defects, scratches, wrinkles, gel, hard spots, streaks, extrusion marks, and air bubbles. The front, back and edges of the sign panels shall be free of router chatter marks, burns, sharp edges, loose rivets, delaminated skins, excessive adhesive overspray, and aluminum marks.

##### 206-7.2.2 Drawings.

1. Standard signs shall be as per the most recently approved California Sign Specifications. The date of approval shall be the date most closely preceding the date of manufacture of the sign(s) or the date of the "Notice to Proceed" of this contract, whichever is most recent.

### 206-7.2.3 Reflective Sheeting.

1. All advisory signs, warning signs and all regulatory signs shall be fabricated with Type IV prismatic sheeting (High Intensity Prismatic or equivalent) or Type IX prismatic cube lens sheeting (Diamond Grade VIP or equivalent) in accordance to ASTM Designation D4956 and conforming to the requirements of these special provisions.

### 206-7.2.4 Sign Panel.

1. Sign panels shall be fabricated from sheet aluminum in accordance with ASTM Designation B209. Sheet aluminum shall be pretreated in accordance to ASTM Designation B449. The surface of sheet aluminum shall be cleaned, deoxidized, and coated with a light and tightly adherent chromate conversion coating free of powdery residue. The conversion coating shall be Class 2 with a mass between 10 milligrams per square foot. Following the cleaning and coating process, the sheet aluminum shall be protected from exposure to grease, oils, dust, and contaminants. Sheet aluminum shall be free of buckles, warps, dents, cockles, burrs, and defects resulting from fabrication.

### 206-7.2.5 Stationary Mounted Temporary Traffic Signs.

1. Stationary mounted temporary traffic signs shall be installed on 10-gage and 12-gage cold-rolled steel perforated tubing posts in the same manner shown on the State of California, Department of Transportation Standard Plans RS1, RS2, RS3 and RS4 for installation of roadside signs, except as follows:
  - a) Wood posts shall not be used.
  - b) Back braces and blocks for sign panels will not be required.
  - c) The height to the bottom of the sign panel above the edge of traveled way shall be at least 2.1 m (7').
  - d) Unless otherwise shown on the Plans, traffic signposts shall conform in materials and installation to SDRS Drawing M-45 and shall have 1 post provided for each 0.48 m<sup>2</sup> (5 ft<sup>2</sup>) of sign area, or the signs may be installed on existing lighting standards when approved by the Engineer.
  - e) Sign panels mounted on temporary traffic signposts shall conform to the requirements of these special provisions.

### 206-7.2.6 Temporary Traffic Sign Posts.

1. Posts shall be 10-gage or 12-gage cold-rolled steel perforated tubing used for the support and stabilization of stationary mounted temporary signs. Post size and number of posts shall be as shown on the Plans, except that when stationary mounted signs are installed and the type of sign installation is not shown on the Plans, post size and the number of posts will be determined by the Engineer. Sign panels for stationary mounted signs shall consist of reflective sheeting applied to a sign substrate.

### 206-7.2.7 Portable Temporary Traffic Signs.

1. Each portable temporary traffic sign shall consist of a base, standard or framework and a sign panel. The units shall be capable of being delivered to the site of use and placed in immediate operation. Sign panels for portable signs shall conform to the requirements of these special

provisions, or shall be cotton drill fabric, flexible industrial nylon fabric, or other approved fabric. Fabric signs shall not be used during the hours of darkness. Size, color, and legend requirements for portable signs shall be as described for stationary mounted sign panels in section 206-7.2 of these special provisions. The height to the bottom of the sign panel above the edge of traveled way shall be at least 0.3-m (12"). All parts of the sign standard or framework shall be finished with 2 applications of orange enamel which will match the color of the sign panel background. Testing of paint will not be required.

ADD the following:

206-8 LIGHT GAGE STEEL TUBING AND CONNECTORS.

206-8.1 General.

1. This Section pertains to 10-gage and 12-gage cold-rolled steel perforated tubing used for the support and stabilization of signs. All shapes shall have a galvanized finish and shall be cold-roll-formed steel conforming to ASTM Designation A-446, Grade A. Galvanizing shall conform to ASTM A-525, Designation G-90. Galvanizing shall be performed after all forming and punching operations have been completed. Cold-rolled steel perforated tubing shall be perforated on all 4 faces with 11mm (7/16") holes on 25 mm (1") centers.

206-8.2 Tolerances.

1. Wall thickness tolerance shall not exceed +0.28 mm, -0.13 mm (+0.011", -0.005"). Convexity and concavity measured in the center of the flat side shall not exceed a tolerance of +0.25 mm (+0.010") applied to the specific size determined at the corner. Straightness tolerance variation shall not exceed 1.6 mm in 1 m (1/16 " in 3'). Tolerance for corner radius is 4.0mm (5/32"), plus or minus 0.40 mm (1/64"). Weld flash on corner-welded square tubing shall permit 3.60 mm (9/64") radius gage to be placed in the corner. Using 10-gage or 12-gage square tube, consecutive size tubes shall telescope freely for 3.1m (10'). Tolerance on hole size is plus or minus 0.40 mm (1/64") on a size. Tolerance on hole spacing is plus or minus 3.2 mm in 6.1 m (1/8" in 20'). In addition, for the following specific sizes of light gage steel tubing, dimensional tolerances shall not exceed those listed in tables 206-8.2 (A) and 206-8.2(B).

**TABLE 206-8.2(A)**  
**LIGHT GAGE STEEL TUBING SIZE TOLERANCE**

Nominal Outside mm	Dimensions (inches)	Outside Tolerance for mm	All Sides at Corners (inches)
25 x 25	(1 x 1)	0.13	0.005
32 x 32	(1 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub> )	0.15	0.006
38 x 38	(1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub> )	0.15	0.006
44 x 44	(1 <sup>3</sup> / <sub>4</sub> x 1 <sup>3</sup> / <sub>4</sub> )	0.20	0.008
51 x 51	(2 x 2)	0.20	0.008
56 x 56	(2 <sup>3</sup> / <sub>16</sub> x 2 <sup>3</sup> / <sub>16</sub> )	0.25	0.010
57 x 57	(2 <sup>1</sup> / <sub>4</sub> x 2 <sup>1</sup> / <sub>4</sub> )	0.25	0.010
64 x 64	(2 <sup>1</sup> / <sub>2</sub> x 2 <sup>1</sup> / <sub>2</sub> )	0.25	0.010
51 x 76	(2 x 3)	0.25	0.010



**TABLE 206-8.2(B)**  
**LIGHT GAGE STEEL TUBING SQUARENESS OF SIDES AND TWIST**

Nominal Outside Dimension mm	(Inches)	Squareness <sup>(1)</sup> mm	(Inches)	Twist Permissible mm <sup>(2)</sup>	in 900 mm (3") (Inches) <sup>(2)</sup>
25 x 25	(1 x 1)	0.15	0.006	1.3	0.050
32 x 32	(1 <sup>-1/4</sup> x 1 <sup>-1/4</sup> )	0.18	0.007	1.3	0.050
38 x 38	(1 <sup>-1/2</sup> x 1 <sup>-1/2</sup> )	0.20	0.009	1.3	0.050
44 x 44	(1 <sup>-3/4</sup> x 1 <sup>-3/4</sup> )	0.25	0.010	1.6	0.062
51 x 51	(2 x 2)	0.30	0.012	1.6	0.062
56 x 56	(2 <sup>-3/16</sup> x 2 <sup>-3/16</sup> )	0.36	0.014	1.6	0.062
57 x 57	(2 <sup>-1/4</sup> x 2 <sup>-1/4</sup> )	0.36	0.014	1.6	0.062
64 x 64	(2 <sup>-1/2</sup> x 2 <sup>-1/2</sup> )	0.38	0.015	1.9	0.075
51 x 76	(2 x 3)	0.46	0.018	1.9	0.075

<sup>(1)</sup> Tubing may have its sides failing to be 90 degrees to each other by the tolerance listed.

<sup>(2)</sup> Twist is measured by holding down the edge of one end of a square tube on a surface plate with the bottom side of the tube parallel to the surface plate, and noting the height that either corner on the opposite end of the bottom side is above the surface plate.

### 206-8.3 Fasteners.

1. Fasteners used to assemble cold-rolled steel perforated tubing shall be steel "pull-through" electrogalvanized rivets with 9.5 mm (3/8") diameter shank, 22 mm (7/8") diameter head, and a grip range of from 5 mm (0.200") to 0.90 mm (0.356"). The fasteners shall conform to ASTM B-633, Type III.

ADD the following:

206-9 PORTABLE CHANGEABLE MESSAGE SIGN.

### 206-9.1 General.

1. Each portable changeable message sign (PCMS) unit shall consist of a controller unit, a power supply, and a structural support system all mounted on a trailer. The PCMS unit shall be assembled to form a complete self-contained portable changeable message sign, which can be delivered to the site of the Work and placed in immediate operation. The complete PCMS unit shall be capable of operating in an ambient air temperature range of -20°C (-4°F) to +70°C (158°F) and shall not be affected by unauthorized mobile radio transmissions.
2. The trailer shall be equipped so that it can be leveled and plumbed. Full operation height shall be with the bottom of the sign at least 2.1 m (7') above the ground and the top no more than 4.4 m (14.5') above the ground. After initial placement, PCMS shall be moved from location to location as directed by the Engineer.

### 206-9.2 Message Board.

1. The message displayed on the PCMS shall be visible from a distance of 460 m (1500') and shall be legible from a distance of 230 m (750'), at noon on a cloudless day, by persons with vision corrected to 20/20. The sign panel shall be 3-line matrix and shall display not less than 7

characters per line. Sign messages to be displayed shall be as approved by the Engineer. The sign face shall be flat black and shall be protected from glare of the sun by a method which does not interfere with the clarity of the sign message. The sign shall be raised and lowered by means of a power driven lifting mechanism. The matrix sign shall be capable of complete alphanumeric selection.

2. Lamp matrix type signs shall be equipped with an automatic dimming operational mode that automatically compensates for the influence of a temporary light source or other abnormal lighting conditions. The sign shall have manual dimming operation modes of 3 or more different lamp intensities.
3. Matrix signs not utilizing lamps shall be either internally or externally illuminated at night.
4. The controller shall be an all solid-state unit containing all the necessary circuitry for the storage of at least 5 pre-programmed messages. The controller shall be installed in a location allowing the operator to perform all functions from 1 position. A keyboard entry system shall be provided to allow an operator to generate an infinite number of additional messages over the pre-programmed stored messages. The keyboard shall be equipped with a security lockout feature to prevent unauthorized use of the controller. The controller shall contain a nonvolatile memory to hold the keyboard created messages in memory during periods when the power is not activated. The controller shall provide for a variable message display rate which allows the operator to match the information display to the speed of the approaching traffic. The flashing off time shall be operator adjustable within the control cabinet.

#### 206-9.3 Operation and Maintenance.

1. PCMS shall be furnished, placed, operated, and maintained at locations shown on the Plans, specified in this section, or designated by the Engineer. The PCMS will be diligently maintained and repaired by the Contractor throughout the Project in accordance with the manufacturer's recommendations. When ownership is transferred to the Agency (at the end of the job), it must be demonstrated to be in good working condition, and meet the provisions of these Specifications, including current registration.

#### 206-9.4 Measurement and Payment.

1. The Contract unit price PCMS shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the Work involved in furnishing, placing, operating, maintaining, repairing, replacing, transporting from location to location, and delivery of the signs to the Agency at the completion of the construction, in good working order, and as directed by the Engineer, and no other compensation will be made. Payment for "PCMS" shall be included in the lump-sum item for "Temporary Traffic Control".

## SECTION 207 – GRAVITY PIPE

207-2 REINFORCED CONCRETE PIPE (RCP).

207-2.5 Joints.

ADD the following:

1. All RCP joints shall receive a rubber-gasket meeting the requirements of Section 208-3 *Gaskets for Concrete Pipe*.

207-2.9 Basis for Acceptance.

207-2.9.1 General.

DELETE in its entirety and REPLACE with the following:

1. The basis for acceptance shall be the D-load bearing strength test, compliance with these Specifications, inspection of the pipe manufacture and inspection of the completed pipe.

207-17 PVC GRAVITY PIPE.

207-17.2.2 Cell Classification.

DELETE the first sentence and replace with the following:

1. Pipe shall be made of PVC plastic having a cell classification of 12454 or 12364, as defined in ASTM D1784.

207-17.4.2 Acceptance.

DELETE the last sentence and replace with the following:

1. Installation time shall conform to 207-15.6.

ADD the following:

207-17.6 Perforated PVC Pipe.

ADD the following:

207-17.6.1 Materials of Underdrain Pipe.

Perforated plastic pipe shall be smooth-wall PVC plastic pipe or corrugated PVC plastic pipe with a smooth interior surface. All pipes shall comply with 207-17, "PVC GRAVITY PIPE".

ADD the following:

207-17.6.2 Perforation Requirements

Hole Size	3/8 inch (9 mm) min.
Center to Center Spacing	5 inches (125 mm) max.
Row of Holes	4 holes per each row and all on the lower half of the pipe. There shall be 2 holes on each side of the centerline of the pipe. 1 hole shall be at 45° from the centerline of the pipe and 1 hole shall be at 80° from the centerline of the pipe as indicated on the Drawings.

ADD the following:

207-17.7 Underdrain Cleanout.

1. All underdrain cleanout shall conform to 207-17 "PVC GRAVITY PIPE".
2. Underdrain cleanouts shall have watertight, vandal-proof caps.

ADD the following:

207-17.8 Observation Well.

1. All observation wells shall conform to 207-17 "PVC GRAVITY PIPE".
2. Observation wells shall have watertight, vandal-proof caps.

ADD the following:

207-17.9 Overflow Riser.

1. All overflow risers shall conform to 207-17 "PVC GRAVITY PIPE".
2. Overflow risers shall have watertight, vandal-proof caps.

## SECTION 209 – PRESSURE PIPE

209-1 IRON PIPE AND FITTINGS.

209-1.1 Ductile Iron Pipe (DIP).

209.-1.1.1 General.

ADD the following:

1. Ductile iron pipe and fittings and installation shall be as shown on the Plans or specified in the Special Provisions and shall conform with the City of Carlsbad Engineering Standards, Volumes 2 and 3.

209-1.1.2 Materials.

DELETE entirely and replace with the following:

1. Unless otherwise specified, ductile iron pipe shall conform to the following:



**TABLE 209-1.1.2**

<b>Item</b>	<b>Material</b>	<b>Reference Specification/Requirements</b>	
Pipe	Manufacturing Standards	Conform to AWWA C151/ANSI 21.5 for 3”-64” (75 mm – 1600 mm) pipe.	
	Design Standards	Conform to AWWA C150/ANSI A21.50 and AWWA M41.	
	NSF Certification	NSF 61 certification required for potable water pipe.	
	Material	Ductile iron.	
	Size	As shown on the Plans.	
	Minimum Wall Thickness	3”-12” (75 mm – 300 mm) pipe	Pressure Class 350.
		14” – 36” (350 mm – 900 mm) pipe	Pressure Class 250.
		42” – 64” (1050 mm – 1600 mm) pipe	Pressure Class 200.
		Pipe with threaded flanges	Per AWWA C115/ANSI 21.15.
		Pipe with grooved couplings	Thickness Class 53.
Markings	Conform to AWWA C151 Section 4.6.		
Lengths	18’ or 20’ (5.5 m or 6.1 m) lengths per AWWA C151/ANSI A21.51. Shorter lengths may be used to facilitate curves or fit horizontal or vertical alignment.		
Interior Lining and Exterior Coating	Buried Exterior Coatings	Shop coat with 1 prime coat of asphaltic coating approximately 1 mil (25 µm) thick per AWWA C151.	
	Exterior Coatings on Pipe Above Ground and in Vaults	Conform to 212-12.	
	Cement-Mortar Interior Lining (AWWA C104 “Double Thickness”	<b>Pipe Size</b>	<b>Lining Thickness</b>
		3” – 12” (75 mm – 300 mm) pipe	1/8” (3 mm)
		14” – 24” (350 mm – 0600 mm) pipe	3/16” (5 mm)
		30” – 64” (900 mm – 1600 mm) pipe	1/4” (6 mm)
		Conform to AWWA C104 using Type II cement	
Fusion-Bonded Epoxy Interior Lining where shown on the Plans	Conform to 212-12.		
	Amine cured novalac epoxy lining.		

Item	Material	Reference Specification/Requirements
	Ceramic Epoxy Interior Lining, where shown on the Plans	Permeability rating of 0.00. Abrasion resistance < 4 mils (100 µm) loss after 1,000,000 cycles on ± 22.5° sliding aggregate slurry abrasion test using a sharp natural siliceous gravel with particle size between 2 mm and 10 mm.
Joints	Standard Push-on Style	AWWA C111/ANSI 21.11
	Mechanical Joint	AWWA C111/ANSI 21.11
	Flange (threaded)	AWWA C115/ANSI 21.15
	Restrained Style	Special push-on type joint providing longitudinal restraint to full test pressure without relying on thrust block.
		Boltless, restrained push-on joint design with positive axial locking restrained system capable of deflection after assembly.
	Use 1 type of restrained joint exclusively for all Work.	
Bell Joint Gaskets	Material	Conform to AWWA C111-ANSI A21.11. Vulcanized styrene butadiene rubber (SBR).
	Material for Hydrocarbon Applications and Contaminated Soils	NBR (Nitrile) (acrylonitrile butadiene), FLUOREL, or FKM (Viton) (fluorocarbon).
	Gasket Age	< 180 Calendar Days old or > 2 years old but retested < 60 Calendar Days prior to installation
Flange Gaskets	Material	212-2.7.
Fittings	Material	Ductile iron.
	Standards	Conform to AWWA C110/ANSI 21.10 or AWWA C153/ANSI A21.53.
	Style	Push-on (standard) with restrained joint (as shown), or flanged. Mechanical joint with special approval.
	Marking	Cast letters "DI" or "DUCTILE" into fittings, unless otherwise specified. Cast "AWWA C110" or "AWWA C153" depending on thickness.
	Exterior Coatings	Use same coating as adjacent pipe, as specified above.
	Interior Linings	Use same lining as adjacent pipe, as specified above.
	Material	Ductile iron.
	Style	Gripping wedge

Item	Material	Reference Specification/Requirements	
Ductile Iron Pipe Joint Restraints	Design Pressure Rating	3" – 16" (75 mm – 400 mm)	350 psi (2.4 MPa)
		18" – 64" (450 mm – 1600 mm)	250 psi (1.7 MPa)
Pipe Shop Coat	Prime Coat	12 mils (300 µm) MDFT.	
Polyethylene PE Encasement	Polyethylene Film and Tape	Conform to 212-12.1.1. Color per 212-12.2	
Alternate to Polyethylene Encasement	Pipe Finish Coat	15 mils (375 µm) MDFT field-applied bitumastic coating.	

209-2 STEEL PIPE AND FITTINGS.

209-2.1 General.

ADD the following:

1. Steel pipe and fittings and installation shall conform with the City of Carlsbad Engineering Standards, Volumes 2 and 3.

209-2.3 Mill-Type Steel Pipe.

209-2.3.1 Materials.

DELETE entirely and replace with the following:

1. Unless otherwise specified, mill-type steel pipe shall conform to the following:

**TABLE 209-2.3.1**

Item	Material	Reference Specification/Requirements
Pipe	Manufacturing Standards	Furnace-welded, electrically welded or seamless pipe conforming to AWWA C200 for pipe 6" (150 mm) and larger or ANSI B36.10 for pipe smaller than 6" (150 mm) or for pipe with wall thickness specified by strength or schedule on the Plans.
	Design Standards	Conform to AWWA M11.
	NSF Certification	NSF 61 certification required for potable water pipe.
	Material	ASTM A53 Grade A or B, ASTM A134 (steel plate per ASTM A283 Grades C or D or A36), ASTM A135, or ASTM A139.
	Size	
		Conform to dimensional tolerances of AWWA C200 for pipe ≥ 6" (150 mm) identified on the Plans by class, gauge or decimal wall thickness.
		Conform to ANSI B36.10 for pipe > 6" (150 mm) or for pipe specified on the Plans by strength or wall-thickness schedule.

Item	Material	Reference Specification/Requirements
	Minimum Wall Thickness	<p>Where the Plans do not show thickness, submit design and supporting calculations prepared by the manufacturer in accordance with AWWA M11 using a maximum design working stress of 1/2 the yield stress for the grade of steel used in pipe fabrication. Compute wall thickness using pressure equal to 250 psi (1.72 MPa) or the design pressure shown on the Plans plus 50 psi, whichever is greater.</p> <p>No pipe 4" (100 mm) and larger outside buildings or vaults shall have a wall thickness less than 14-gauge (1.9 mm)</p> <p>No pipe 4" (100 mm) and larger inside buildings or vaults shall have a wall thickness less than 3/8" (9.5 mm).</p>
	Markings	<p>Mark each special and each length of straight pipe at bell end to identify:</p> <ul style="list-style-type: none"> <li>• Manufacturer's name or mark</li> <li>• Type of steel</li> <li>• Design pressure</li> <li>• Diameter and weight of pipe or special</li> <li>• Proper location of pipe or special by reference to layout schedule</li> </ul>
	Lengths	Furnish in single random lengths, double random lengths, or in specified cut lengths.
		For single random lengths, average length shall not be less than 17.5' (5.3 m) and no piece shall be shorter than 9' (2.7 m).
		For double random lengths average length shall not be less than 35' (10.7 m), not less than 10% of pieces shall be shorter than 26.25' (8.0 m) and no piece shall be shorter than 14' (2.7 m).
		For specified cut lengths, the actual pipe length shall not vary from the specified length by more than 1/8" (3 mm).
	Interior Lining and Exterior Coating (Required on exposed steel surfaces and ring joints)	Cement-Mortar Interior Lining and Exterior Coating
Trim mortar lining as necessary to allow full operation of butterfly or check valves at connections to steel pipe.		
Line exposed portions of pipe interior with hand-applied epoxy conforming to 212-12.		
3/4" (19 mm) min coating thickness unless otherwise shown or soil is identified as corrosive.		
Trim coating 6" to 12" (150 mm to 300 mm) above grade on spools penetrating to daylight or vault interiors.		
Cold-Applied Tape Exterior Coatings		Conform to AWWA C209 for the exterior of specials, connections, and fittings.



Item	Material	Reference Specification/Requirements
		Conform to AWWA C214 for steel pipeline coatings.
	Liquid Epoxy Interior Lining and Exterior Coating of Above-Ground Pipe	Conform to AWWA C210 and 212-12.
	Fusion-Bonded Epoxy Interior Lining and Exterior Coating of Above-Ground Pipe	Conform to AWWA C213 and 212-12.
	Extruded Polyolefin Exterior Coatings	Conform to AWWA C215 for extruded coatings. Conform to AWWA C216 for heat-shrinkable cross-linked coatings.
Joints	Ends Prepared for Mechanical-Coupled Field Joints	Conform to AWWA C200 Section 4.13. Square cut or beveled with no burrs. Outside surfaces where coupling seats shall be free of indentations, projections, or roll marks to ensure watertight seal. Pipe ends shall have the tolerances within limits required by the mechanical coupling manufacturer.
	Field-Butt-Welded Joints	Pipe with wall thickness 15/64" (6.0 mm) or greater, intended for field butt welding. Bevel pipe on outside, inside or both sides as shown or specified. Bevel angle shall be 30 to 35 degrees measured from plane perpendicular to pipe axis. Width of root face at pipe end shall be 1/32" to 3/32" (0.8 mm to 2.3 mm)
	Flanged Joint	Forged steel conforming to ASTM A181 Faced and dimensioned in accordance with ASME/ANSI B16.5 for the pressure class shown on the Plants or specified in the Special Provisions. Threads for screwed flanges and companion pipe ends shall conform to ASME/ANSI B1.20.1. Pipe ends for welding neck flanges shall be beveled.
Flange Gaskets	Material	212-2.7
Fittings	Material	Same steel as pipe.
	Standards	Manufacture from mill-type steel pipe in accordance with ASME/ANSI B16.9.
	Exterior Coatings	Use same coating as adjacent pipe, as specified above.
	Interior Linings	Use same lining as adjacent pipe, as specified above.

209-4 PVC PRESSURE PIPE.

209-4.1 General.

ADD the following:

1. PVC pipe and fittings and installation shall conform with the City of Carlsbad Engineering Standards, Volumes 2 and 3.

209-4.2 Materials.

DELETE entirely and replace with the following:

1. Unless otherwise specified, PVC pressure pipe shall conform to the following:

**TABLE 209-4.2**

Item	Material	Reference Specification/Requirements	
Pipe	Manufacturing Standards	Conform to AWWA C900 for pipe 4" – 60" (100 mm – 1,500 mm).	
	Design Standards	Conform to AWWA M23 using hydraulic design basis below.	
	NSF Certification	NSF 61 certification required for potable water pipe.	
	Material	Virgin rigid poly-vinyl-chloride. Conform to ASTM D1784 Cell Class 12454B or better. Conform to NSF 13. Conform to AWWA C900 Section 4.2.	
	Markings (each pipe)	Conform to AWWA C900 Section 6.1.	
		Mark applicable AWWA standard.	
		Show nominal pipe diameter.	
		Show AWWA pressure class or DR.	
		Show NSF 61 stamp (for potable water service).	
	Size	Show manufacturer and manufacturing date code.	
		As shown on the Plans. Conform to outside diameter of ductile iron pipe unless otherwise shown.	
	Minimum Wall Thickness (Dimension Ratio)	<b>Design Pressure and Diameter Shown on the Plans</b>	<b>Minimum Dimension Ratio</b>
		0-100 psi (.7 MPa) 4" – 16" (100 mm – 400 mm)	DR 18 (Class 235)
100-200 psi (1.0 MPa) 4" – 16" (100 mm – 400 mm)		DR 14 (Class 305)	
Greater than 200 psi (1.4 MPa) or greater than 16"		Use DIP or Steel Pipe	
Pipe with Grooved Couplings		Use DIP or Steel Pipe	

Item	Material	Reference Specification/Requirements
	Lengths	Laying lengths shall be 20' with option to supply up to 15% random (minimum length 10') sections
Joints	Standard Push-on Style	Conform to ASTM D3139.
Bell Joint Gaskets	Material	Elastomeric membrane per AWWA C900 Section 4.2.4 (Gaskets and Lubricants) and ASTM F477. Butadiene styrene (SBR or BR) for potable water. Ethylene propylene (EPM or EPDM) for recycled water.
	Material for Hydrocarbon Applications and Contaminated Soils	Elastomeric membrane per AWWA C900 Section 4.2.4 (Gaskets and Lubricants) and ASTM F477. NBR (Nitrile) (acrylonitrile butadiene), FLUOREL or FKM (Viton) (fluorocarbon).
	Gasket Age	< 180 Calendar Days old or < 2 years old but retested < 60 Calendar Days prior to installation
Fittings	Material	Ductile iron.
	Standards	Conform to AWWA C110/ANSI 21.10 or AWWA C153/ANSI A21.53.
	Style	Push-on (standard) or restrained joint (as shown).
	Marking	Cast letters "DI" or "DUCTILE" into fittings, unless otherwise specified.
	Exterior Coatings	1 mil (25 µm) petroleum asphaltic coating.
	Interior Linings	Cement mortar (double thickness).
	Plastic Film Wrap for Corrosion Protection	Conform to 212-12.1.1. Color per 212-12.2.

209-5 HIGH-DENSITY POLYETHYLENE (HDPE) SOLID WALL PRESSURE PIPE.

209-5.1 General.

ADD the following:

1. HDPE pipe and fittings and installation shall conform with the City of Carlsbad Engineering Standards, Volumes 2 and 3.

209-5.2 Materials.

DELETE in its entirety and replace with the following:

1. Unless otherwise specified, HDPE pressure pipe shall conform to the following.

**TABLE 209-5.2**

<b>Item</b>	<b>Material</b>	<b>Reference Specification/Requirements</b>	
Pipe	Manufacturing Standards (Potable Water Pipe)	Conform to AWWA C901 for pipe 1/2" – 3" (12.5 mm – 75 mm). Conform to AWWA C906 for pipe 4" – 63" (100 mm – 1575 mm).	
	Manufacturing Standards (Non-Potable Water Pipe)	Conform to ASTM F714	
	Design Standards	Conform to AWWA M55.	
	NSF Certification	NSF 61 certification required for potable water pipe.	
	Material	ASTM D3350 PE 4710 Cell classification 4454 or higher. Conform to AWWA C901 Section 4.2 or AWWA C906 Section 4.2 as appropriate.	
	Markings (each pipe)	Conform to AWWA C901 or C906 Section 6.1.	
		Mark applicable AWWA standard.	
		Show nominal pipe diameter.	
		Show standard material code designation.	
		Show AWWA pressure class or DR.	
		Show NSF 61 stamp (for potable water service).	
	Size	Show manufacturer and manufacturing date code.	
		1-1/4" – 63" (32 mm – 1575 mm) diameter as shown on the Plans. Ductile iron pipe size (DIPS) outside diameter for pipe 4" – 48" (100 mm – 1200 mm) unless otherwise shown. Iron pipe size (IPS) outside diameter for pipe ≤ 4" (100 mm) or > 48" (1200 mm).	
	Minimum Wall Thickness (Dimension Ratio)	<b>Design Pressure Shown on the Plans</b>	<b>Minimum Dimension Ratio</b>
0-80 psi (0.6 MPa)		DR 21	
80-100 psi (0.7 MPa)		DR 17	
100-150 psi (1.0 MPa)		DR 11	
150-200 psi (1.4 MPa)		DR 9	
	Greater than 200 psi	Use ductile iron or steel	
Joints	Style	Thermal butt fusion for joining pipe in accordance with the manufacturer's recommendations.	
		Flanged for connections to appurtenances and other pipe materials in accordance with manufacturer's recommendations.	



Item	Material	Reference Specification/Requirements
	Flange Back-up Ring	Provide flange back-up ring of Type 316 SS or fusion bonded epoxy coated ductile iron.
	Design Pressure	Match design pressure rating of pipe shown on the Plans.
Fusion Fittings	Standards	ASTM D2683 socket-type, ASTM D3261 butt-type, or ASTM F1055 electrofusion (fittings shall be marked as complying).
	Material	HDPE conforming to pipe specifications.
	Pressure Rating	De-rated pressure of fitting shall meet or exceed design pressure rating of pipe shown on the Plans.
Adaptor Fittings (For Connections to Flanged Fittings)	Internal Stiffener Ring	Required for mechanical joint connections.
	Backup Ring	Stainless steel.
	Thrust Restraint.	HDPE in-line wall anchors and thrust blocks and per manufacturer's requirements.

209-7 PIPELINE IDENTIFICATION.

209-7.2 Requirements.

DELETE in its entirety and replace with the following:

1. Pipeline identification shall conform to the following:

**TABLE 209-7.2**

Function	Type	Materials/Method	
Pipe Contents Identification	Pipe Color (Plastic Pipe or Polywrap)	Blue for Potable Water. Purple for Recycled Water. Green for Sewage.	
	AND		
	Stenciling	Stenciling marked on pipe in contrasting color to background color of pipe stating: "POTABLE WATER," "CAUTION RECYCLED WATER – DO NOT DRINK" or "CAUTION SEWER" as appropriate.	
		5/8" (16 mm) high letters.	
		Repeated at 1 foot (300 mm) intervals.	
	OR		
	Identification Tape	Polyethylene tape 6" (150 mm) wide and 4 mils (100 µm) minimum thickness with 2" (50 mm) high letters stating: "POTABLE WATER," "CAUTION RECYCLED WATER – DO NOT DRINK" or "CAUTION SEWER" as appropriate.	

Function	Type	Materials/Method
		For pipe > 12" (300 mm) diameter, use 12" (300 mm) wide tape.
		Color – Blue with black or white letters for potable water, Purple with black or white letters for recycled water, Green with black or white letters for sewage.
		Attached to top of pipe with adhesive tape.
Pipe Warning and Locating	Warning and Locating Tape	Polyethylene tape 6" (150 mm) wide and 4 mils (100 µm) minimum thickness with 2" (50 mm) high letters stating: "CAUTION: WATERLINE BURIED BELOW," "CAUTION: RECLAIMED WATERLINE BURIED BELOW – DO NOT DRINK," or "CAUTION: SEWER BURIED BELOW" as appropriate. For pipe > 12" (300 mm) diameter, use 12" (300 mm) wide tape.
		Color – blue with black or white letters for potable water, Purple with black or white letters for recycled water, Green with black or white letters for sewage.
		Place in pipe trench 18" (450 mm) above pipe.
		Tape shall contain metallic strip that can be registered by magnetic field locating device.
	OR	
	Locating Wire	In lieu of installing metallic warning tape; non-metallic warning tape 18" (450 mm) above pipe and 10-gauge copper wire attached to top of pipe and accessibly terminated may be used.

## SECTION 210 – PAINT AND PROTECTIVE COATINGS

ADD the following:

210-6 ANTI-GRAFFITI COATING. Anti-graffiti coating shall conform to Section 78-4.06, "Anti-Graffiti Coating", of the State of California Department of Transportation Standard Specifications.

## SECTION 212 – WATER & SEWER SYSTEM VALVES & APPURTENANCES

212-1 GENERAL.

212-1.2 Products Conveying Potable Water.

DELETE b) and REPLACE with the following:

- b) have an interior lining listed as complying with NSF 61 and certified to be holiday-free.

212-2 FLANGED AND THREADED CONNECTIONS.

212-2.8.2 Insulation of Threaded Connections.

DELETE in its entirety and REPLACE with the following:

1. Threaded insulating bushings, couplings or unions shall be furnished and installed where dissimilar threaded piping materials are joined.

212-3 PIPE HANGERS AND SUPPORTS, CASINGS SPACERS, AND WALL PENETRATIONS.

212-3.4 Rubber Annular Hydrostatic Sealing Devices.

212-3.4.1 General.

DELETE the last sentence and REPLACE with the following:

1. The sealing device shall be capable of sealing a minimum hydrostatic pressure of 20 psi.

212-5 VALVES.

212-5.5.1.2 Materials.

DELETE TABLE 212-5.5.1.2 in its entirety and REPLACE with the following:

**TABLE 212-5.5.1.2**

Item	Option	Reference Specification/Requirements
Body and Cover	Ductile Iron or	ASTM A536 Grade 65-45-12.
Body and Cover for Pressures over 250 psi (1.7 MPa)	Ductile Iron	ASTM A536 Grade 65-45-12.
Disc and Disc Arm	Ductile Iron	ASTM A536 Grade 65-45-12.
Seat	SAE Type 316 Stainless Steel	ASTMA276.
Pivot Shaft	SAE Type 316 Stainless Steel	ASTMA276.

212-10 SERVICE LATERALS, METERS, AND METER BOXES.

212-10.3 Corporation Stops, Angle Meter Valves, Service Saddles and Other Service Materials.

DELETE the last sentence of the first paragraph and REPLACE with the following:

1. Unless otherwise shown on the Plans or specified in the Special Provisions, service saddles and corporation stop inlets shall be threaded per NPT tapered per ANSI B1.20.1.

ADD the following:

212-13 TRACER WIRE FOR NON-METALLIC PIPE.

212-13.1 General.

1. Tracer wire shall conform to the following:

- a) Conductor: Minimum 10 AWG, copper clad steel or solid copper (direct burial) or 8 AWG, copper clad steel (directional drilling), rated for 30 volts.
- b) Break load: minimum 600-lb (direct burial); 2,500-lb (directional drilling)
- c) Insulation: High Molecular Weight Polyethylene (HMWPE), minimum 30-mil (direct burial); 45-mil (directional drilling). Color per the APWA uniform color code.
- d) Splices and connectors: For direct burial only, moisture displacement and corrosion proof, direct bury splice kits, UL rated for 600 volts.

## SECTION 213 – ENGINEERING GEOSYNTHETICS

Add the following section:

### 213-5.1 General.

Geotextile types shall be used for the applications listed in Table 213-5.1.

**Table 213-5.1  
GEOTEXTILE APPLICATIONS**

Application of Geotextile	Type Designation
Separation of Soil and Street Structural Section	90WS
Separation of Soil and Subsurface Aggregate Drain	180N
Reinforcement of Street Structural Section	200WS
Remediation and Separation of Soil	270WS
Reinforcement of Soil	270WS
Drainage at the Interface of Soil Structures	N/A
Drainage at the Interface of Soil and Structures	N/A
Rock Slope Protection Fabric for Rock Sizes Below ¼ Ton	180N
Rock Slope Protection Fabric for Rock Sizes Including and Above ¼ Ton	250N
Plant Protection Covering	90N
Erosion Control Fence with 14 AWG - 6"x6" Wire and 10' Post Spacing	90WS
Erosion Control Fence with 6' Post Spacing and No Wire Fencing	200WS



Add the following section:

213-5.2 Gravel bags. Gravel bags for the use of temporary erosion control shall be burlap type, filled with no less than 23kg (50 lbs) of 19 mm (3/4") crushed rock and securely tied closed. Plastic bags are not acceptable.

## SECTION 216 – PRECAST REINFORCED CONCRETE BOX

216-4 TESTING REQUIREMENTS.

### 216-4.2.2 Acceptance.

DELETE the first paragraph and REPLACE with the following:

1. When the average compressive strength of all cylinders tested is equal to or greater than the specified compressive strength of the PCC, and not more than 10 percent of the cylinders tested have an average compressive strength less than 90 percent of the specified compressive strength, and no cylinder tested has a compressive strength less than 85 percent of the specified compressive strength, the lot will be accepted.

## SECTION 217 – BEDDING AND BACKFILL MATERIALS

217-1 BEDDING MATERIAL.

### 217-1.1 General.

ADD the following:

1. Bedding for pipelines of any material shall conform with the City of Carlsbad Engineering Standards, Volumes 2 and 3.

217-2 TRENCH BACKFILL.

### 217-2.1 General.

DELETE TABLE 217-2.1 and replace with the following:

**TABLE 217-2.1**

<b>Zone</b>	<b>Zone Limits</b>	<b>Maximum Size (greatest dimension)</b>	<b>Rock</b>	<b>Sand Equivalent (Excluding Rock)</b>
Backfill Zone	From subgrade to 12" (300 mm) above top of pipe or conduit	4" (150 mm)		Not less than 20 unless otherwise shown on the Plans or specified in the Special Provisions.

217-3 STRUCTURE BACKFILL.

Add the following:

Material used for the structure backfill of the retaining wall shall be soil material with less than 40 percent passing the standard #200 sieve and not less than 70 percent pass the U.S. standard 3/4-inch sieve, expansion index of less than 30 and minimum internal friction angle of 30°. The backfill material should not contain any organic debris, rocks, or hard lumps greater than 3 inches, or other deleterious materials. All backfill soils should be compacted to at least 90 percent of maximum dry density as determined in the laboratory by the ASTM D1557 testing procedure.

ADD the following:

217-5 GEOCOMPOSITE DRAIN SYSTEMS. Geocomposite drain systems shall comply with Section 68-7, "Geocomposite Drain Systems," of the State of California Department of Transportation Standard Specifications.

## PART 3 CONSTRUCTION METHODS

### SECTION 300 – EARTHWORK

#### 300-1 CLEANING AND GRUBBING.

##### 300-1.1 General.

Add the following:

Also included in clearing and grubbing shall be removal and disposal of existing street poles and lights, metal guard rail, fences, retaining walls, asphalt concrete and aggregate base, asphalt dike, concrete curb and gutter, concrete sidewalk, existing gate, existing headwalls, rip-rap, traffic signs, sawcutting, and other existing features which interfere with the work. Whether or not such items are shown on the plans they shall be removed as a part of clearing and grubbing. Existing underground pipes and conduits that are shown on the plans and designated to be removed shall be removed by the Contractor as a part of clearing and grubbing.

DELETE the following:

##### 300-1.2 Root Pruning and Tree Trimming.

##### 300-1.3 Measurement.

DELETE in its entirety and REPLACE with the following:

1. Clearing and grubbing, if measured for payment, will be measured by the acre or lump sum.

##### 300-1.4 Payment.

DELETE the second sentence.

#### 300-2 UNCLASSIFIED EXCAVATION.

##### 300-2.1 General.

Add the following:

Unclassified excavation shall include removal and stockpile of suitable material, recompaction, mixing, grading for mitigation work, trenching and backfilling of storm drains, sewers, other utilities, disposal of unsuitable materials not included in the bid item for clearing and grubbing, all cut and fill including removal and recompaction of unsuitable soil, salvaging clean excavated material and filling areas to the required grades and cross section. Unclassified excavation shall be utilized onsite to make all fills shown on the plans. Unclassified excavation shall also include scarification and moisture adjustment and compaction of the top 600 mm (2') of the subgrade in the roadway prism in cut areas to 95 percent relative compaction, wetland mitigation grading and attendant work, export of remaining excess material to a disposal site or spoil area acquired by the Contractor and pumping and disposal of storm and ground water.

### 300-3 STRUCTURE EXCAVATION AND BACKFILL.

#### 300-3.1 General.

Add the following:

The Contractor shall excavate to the lines and levels required and/or shown on the Drawings. The Contractor shall provide all temporary shoring, bracing, cribbing, pumping, and planking required. The Contractor shall excavate and maintain the bottom of all trenches in a condition that is level, firm, clean and free from all debris or foreign matter. Excavations shall be kept free from water at all times. The Contractor shall remove any unsuitable material encountered below grade as shown on the plans and as directed by the Engineer. Replace the material with Class 2 AB and compact it as specified for structure backfill in section 19-3.03E, Structure Backfill,” of the State of California Department of Transportation Standard Specifications. The relative compaction must be at least 95 percent.

### 300-4 UNCLASSIFIED FILL.

#### 300-4.10 Payment.

Replace with the following:

Unclassified fill, grading, shaping, compacting or consolidating, slope rounding, construction of transitions, and all work included in Section 300-4 shall be included as an incidental to the payment for unclassified excavation and no additional compensation will be made therefore.

### 300-9 GEOTEXTILES FOR EROSION CONTROL.

ADD the following:

**309-9.2 General.** The Contractor shall provide erosion control and water pollution control conforming to the requirements shown on the plans, as specified herein, and as elsewhere required by the Contract Documents. Erosion control and water pollution control shall include the work specified herein, and such additional measures, as may be directed by the Engineer, to meet Best Management Practices, as defined herein, and to properly control erosion and storm water damage of the limits of work and construction impacts upon areas receiving drainage flows from within the limits of work.

ADD the following:

**309-9.2.1 Grading Controls.** The Contractor shall protect all areas that have been graded and/or cleared and grubbed as well as areas that have not been graded and/or cleared and grubbed within the limits of work from erosion. The Contractor shall provide temporary earth berms, gravel bags, silt fences, stabilized construction entrances, fiber rolls, inlet protection, hydraulic mulch, street sweeping, concrete washouts, and similar measures, coordinated with its construction procedures, as necessary and as shown on the plans to control on site and off site erosion during the construction period. The Contractor will be required to protect areas which have been cleared and grubbed prior to excavation or embankment operations, and which are subject to runoff during the duration of the contract. The criteria used to determine the appropriate erosion control measures shall be the “Best Management Practices”, hereinafter



BMP, defined and described in the, "Stormwater Best Management Practices Handbook, Construction", Latest edition as published by the California Stormwater Quality Association. The Contractor shall maintain a copy of the "Stormwater Best Management Practices Handbook, Construction", Latest edition on the project site and shall conduct its operations in conformity to said Handbook.

Temporary erosion control measures provided by the Contractor shall include, but not be limited to, the following:

- a) Embankment areas, while being brought up to grade and during periods of completion prior to final roadbed construction, shall be graded so as to direct runoff into impoundment areas within the limits of work where such runoff shall have pollutants removed by BMP methods .
- b) The Contractor shall provide protection by BMP measures to eliminate erosion and the siltation of downstream facilities and adjacent areas. These measures shall include, but shall not be limited to: temporary down drains, either in the form of pipes or paved ditches with protected outfall berms; graded berms around areas to eliminate erosion of embankment slopes by surface runoff; confined ponding areas to desilt runoff; and to desilt runoff.

Excavation areas, while being brought to grade, shall be protected from erosion and the resulting siltation of downstream facilities and adjacent areas by the use of BMP measures. These measures shall include, but shall not be limited to, methods shown on the plans and described herein.

## SECTION 301 - SUBGRADE PREPARATION, TREATED MATERIALS AND PLACEMENT OF BASE MATERIALS

### 301-1 SUBGRADE PREPARATION.

#### 301-1.2 Preparation of Subgrade.

Modify the second and third paragraphs as follows: Change each instance reading "6 inches (150mm)" to "12 inches (300 mm)".

**301-1.3 Relative Compaction.** Delete the first paragraph and substitute the following: The Contractor shall compact the upper 12" (300 mm) of subgrade beneath areas to be paved, have base or subbase material placed on them (including pipelines), or curb, gutter, curb and gutter, alley pavement, driveway, sidewalk constructed over them, to no less than 95 percent maximum dry density as determined by ASTM test D-1557-12.

301-1.7 Payment. Modify the first paragraph as follows: Payment for subgrade preparation shall be incidental to the contract bid price for which the subgrade is prepared and shall include all labor, materials; including water, operations and equipment to scarify, adjust moisture, compact or recompact the subgrade, both in cut areas and in fill areas, and no further compensation will be allowed.

## SECTION 302 - ROADWAY SURFACING

ADD the following:

### 302-1 GENERAL.

#### 302-1.1 Vegetation Treatment.

1. The Contractor shall treat all vegetation within the limits of the paved area to be surfaced with an herbicide that complies with the City's Integrated Pest Management program. Herbicide shall be applied at least 2 Working Days prior to surfacing the street. Allowance for the 2-day period shall be shown in the schedule required per section 6-1. Payment for pavement surfacing shall include tree trimming and herbicide treatment of the areas to be surfaced and no extra payment will be made for tree trimming and herbicide treatment.

#### 302-1.2 Coordination.

1. The Contractor shall schedule the Work so as to prevent damage by all traffic. The Contractor shall not schedule Work so as to conflict with trash pickup. The trash hauling schedule can be obtained by calling Republic Services at (760) 332-6464. At least 2 weeks prior to Work, Contractor shall send, by first class mail, notification letters to all property addresses within 500-feet of the Work. Obtaining the appropriate addresses shall be the Contractor's responsibility. A sample letter may be provided by the Agency to be used as an example. The letter should provide the name of the Contractor and a 24-hour phone number for residents to call if they have any issues or questions.
2. During operations, the Contractor's schedule for resurfacing shall be designed to provide residents and business owners sufficient paved parking within an 800-foot distance from their homes or businesses.
3. Seventy-two hours prior to the start of any construction in the public right-of-way that affects vehicular traffic and/or parking or pedestrian routes, the Contractor shall give written notification of the impending disruption. For a full street closure, all residences and/or businesses on the affected street or alley shall be notified. For partial street closures, or curb, sidewalk and driveway repairs, the residences and/or businesses directly affected by the Work shall be notified.

### 302-2 CHIP SEAL.

#### 302-2.6.2 Polymer Modified Emulsified Asphalt.

DELETE the first paragraph and replace with the following:

1. Polymer modified emulsified asphalt shall be applied when the ambient temperature is between 60°F and 105°F (16°C and 41°C), and the roadway pavement surface temperature is a minimum of 55°F (13°C); or as specified by the Engineer.

#### 302-2.6.3 Modified Paving Asphalt.

DELETE the first paragraph and replace with the following:

1. Modified paving asphalt shall be applied when the atmospheric temperature is 65°F (18°F) or above and the existing pavement surface temperature is 80°F (27°C) or above; or as specified by the Engineer.

#### 302-4 SLURRY SEAL.

##### 302-4.2 Mix Design.

DELETE the last paragraph and REPLACE with the following:

When a mix design is more than 30 Calendar Days old, it shall be supplemented with a Certificate of Compliance that states the combined aggregate gradation is within  $\pm 3$  percent of the referenced mix design based on a 30-day moving average or the average of a minimum of 10 of the most current laboratory results, whichever is greater. A mix design shall be reformulated if it is more than 6 months old or whenever the combined aggregate gradation changes from that in the previously submitted mix design by  $\pm 3$  percentage points on any sieve size shown in Table 203-5.3.2. If the source of any aggregate or emulsified asphalt is changed, or the mix design or supporting laboratory reports are over 6 months old, a new mix design shall be submitted.

#### 302-5 ASPHALT CONCRETE PAVEMENT.

ADD the following:

##### 302-5.8 Manholes and Other Structures.

1. When placing the overlay, the Contractor shall pave over appurtenances in the roadway which includes sanitary and storm access covers, water valve boxes, air vents, sewer dead end boxes and survey monument boxes. Each appurtenance shall be treated or covered to prevent adhesion of the overlay. Each appurtenance shall be located immediately after the overlay is placed and shall be thoroughly cleaned of any and all construction debris which may have entered due to the Contractor's operation. The Contractor shall adjust all CMWD water valve boxes per CMWD Standard Drawing No. W23. All City of Carlsbad sanitary sewer access covers shall be adjusted per CMWD Drawing No. S1, S-4, or S-6. All storm sewer access covers shall be adjusted per SDRSD D-10. Riser rings or extensions shall not be used for the adjustment of these appurtenances.
2. Raising and adjusting to grade all City-owned or CMWD-owned appurtenances in the roadway shall be paid for at the Contract Unit Price per each as shown in the Bid. Such price shall constitute full compensation for all labor, materials, and equipment necessary for completing the Work as described in these Specifications and Plans. Other agencies will be responsible for their own appurtenances.

## 302-8 SEALCOAT FOR MISCELLANEOUS AREAS.

### 302-8.2.1 General.

DELETE the second paragraph and REPLACE with the following:

1. Sealcoat material shall be diluted using clean, potable water in an amount not to exceed 20 percent of the total volume.

### 302-8.2.2. Spreading.

DELETE the first paragraph and REPLACE with the following:

1. Sealcoat shall be applied when the atmospheric temperature is greater than 55°F (13°C) and if rain is not forecast for the period of 24 hours after application; or as specified by the Engineer.

ADD the following:

## 302-15 ASPHALT CONCRETE DIKE.

ADD the following:

**302-15.1 General.** Asphalt concrete materials shall conform to Section 203-6.4. Prior to placement of asphalt concrete dike, the existing surface shall be clear of all dirt, moisture, and debris. The asphalt concrete dike shall be placed and compacted to the required lines, grades, and cross sections shown on the plans.

## SECTION 303 – CONCRETE AND MASONRY CONSTRUCTION

### 303-1 CONCRETE STRUCTURES.

#### 303-1.2 Subgrade for Concrete Structures.

Add the following: If groundwater is encountered, Contractor shall work a minimum 2' deep of ¾" gravel into soil to provide an adequate base for construction of concrete structure.

#### 303-1.9 Surface Finishes.

ADD the following:

**303-1.9.5 Anti-Graffiti Coating.** Anti-graffiti coating shall be provided on exposed retaining wall surfaces above finished ground and to at least 1 foot below finished ground. Anti-graffiti coating shall conform to Section 78-4.06, "Anti-graffiti Coating," of the State of California Department of Transportation Standard Specifications.

ADD the following:

### 303-9 POROUS SIDEWALK.

ADD the following:



303-9.1 General. Porous sidewalk shall conform to the details on the Plans and STORMCRETE POROUS SIDEWALK STANDARD DETAIL, Detail D1 per Porous Technologies, LLC, or approved equal.

Porous Technologies, LLC  
[www.lidtech.com](http://www.lidtech.com)

303-2 AIR-PLACED CONCRETE.

#### 303-2.1.1 General.

ADD the following:

Modify Regional Standard Drawing D-75 as follows: replace stucco netting with 6" x 6" (150mm x 150mm) by No. 10 by No. 10 welded wire mesh.

303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS.

#### 303-5.1.1 General.

ADD the following:

Portland Cement Concrete construction shall include, but not limited to, curbs, walkways, cross gutters, access ramps, driveways, concrete curb outlet, terrace ditches, and all other miscellaneous PCC construction items as indicated on the plans and per these Specifications.

6" Curb and Gutter shall conform to the standard referenced on the plan (I.E: SDRSD G-2 (Type G) or CALTRANS A82A), the details on the plans, and these specifications. Adjacent AC/AB removal associated with concrete curb construction shall be full depth AC replacement and a minimum width of one foot from the face of concrete edge. Removal of AC shall be incidental to Section 401-1 Removals. Replacement of AC shall be considered incidental to this Section and conform to the requirements of Sections 203-6 and 302-5.

The Contractor shall verify with a "smart level", string line and/or water testing that positive drainage is maintained upon completion of finishing, and any irregularities causing water ponding shall be corrected and refinished. The CITY shall be present to verify the concrete forms, prior to pouring any PCC construction improvements.

#### 303-5.5.2 Curb.

ADD the following: The Contractor shall stamp the curb face with 75 mm (3") high block letters directly above the point that it is crossed by underground facilities with the marking specified in Table 303-5.5.2(A).

**TABLE 303-5.5.2(A)  
Curb Face Markings**

Type of underground facilities	Marking
Water Service Lateral	<b>W</b>
Sewer Service Lateral	<b>S</b>
Irrigation Water Lateral or Sleeve	<b>RW</b>

**303-5.9 Measurement and Payment.**

ADD the following:

Curb and gutter, and curb, shall be considered as continuing across driveways, access ramps and drainage inlets when constructed adjacent thereto. Neither curb and gutter nor curb will be paid for across the length of local depressions, except that which occurs in gutter transitions at each side of an inlet.

**303-6 STAMPED CONCRETE.**

**303-6.1 General.**

ADD the following:

Concrete shall be 560-C-3250 with 6"x6" – 10 guage wire mesh throughout.

Add the following:

**303-6.5 Concrete Finishing Products.**

**303-6.5.1 Water Base Penetrating Sealer for Integral Colored Concrete.**

(Scofield Colorcure Concrete Sealer or approved equal)

Water base penetrating sealer shall be a sealer designed for the protection of imprinted and natural concrete.

Water base penetrating sealer shall be a sealer designed for the protection of imprinted, colored and natural concrete, and other masonry surfaces to preserve the natural appearance of the masonry without darkening or adding gloss to the surface. It shall preserve the natural slip resistance of the concrete, etc. Sealer shall repel spills and soils, minimizing staining and maintenance.

Seal shall leave no visible material on the surface and shall be absorbed and locked into the pores of the masonry, repelling liquids and soils but leaving the top surface natural in appearance. Install per manufacturer's directions. Seal shall be compatible with the surfaces and materials which it is applied. Concrete sealer shall conform to the following specifications:

- Color: Clear, non-yellowing
- Odor: Mild
- Flash Point: None (C.O.C. method)
- Specific Grav.: 1.03
- Density: 8.6 pounds per gallon

Drying Time: 30 minutes to 60 minutes  
Cure Time: 24 to 48 hours  
VOC Content: None (0 g/l) excluding water  
Polymer Type: Proprietary Reactive Resin System

Coverages (approximate):

Smooth Concrete: 300 to 400 square feet per gallon  
Rough Concrete: 200 to 300 square feet per gallon  
Note: Coverages vary depending on porosity and condition of surface and method of application

Method of

Application: Airless sprayer.  
Manufacturer: Scofield Chromix Admixtures for color-conditioned concrete, or approved equal  
L.M. Scofield Company  
6533 Bandini Boulevard  
Los Angeles, CA 90040  
1-800-800-9900

All materials shall be furnished, prepared, applied, cured, and stored according to the product manufacturer's direction.

ADD the following:

**303-6.7 Measurement and Payment.** Payment for colored, stamped concrete shall be paid at the contract unit price. Said payment shall include compensation for survey, sawcut, excavation, disposal of material, grading, backfill, compaction, base material, forming, mesh, reinforcing steel, concrete, integral color, texture sealers, transitions, joints, and other material necessary to construct the specific stamped concrete as indicated on the plans and no additional compensation will be allowed therefor.

**303-7 COLORED CONCRETE**

**303-7.1 General.**

Add the following:

Integral color shall be used to develop colored admixtures developed for use in ready mixed concrete. The product shall be made of the highest quality pigments, as well as other ingredients designed to enhance the color and improve the pigment dispersion, workability and finishing performance of the concrete. Integral color pigments shall meet or exceed ASTM-C-979. The coloring method shall be designed for concrete flatwork applications (salt finished, broom finishes, rotary finishes), as well as vertical surfaces, and other types of architectural concrete. Pigment shall be a permanent coloration, uniform throughout the concrete surface and interior, and shall be highly UV and fade resistant.

Integral colored concrete shall be cured with QC Color Cure color matched to the concrete (see product information bulletin). Provide sample panel submittals of all colors to be used in the installation on identical surfaces for approval by the Engineer. Contractor shall provide a maintenance schedule for integral colored concrete.

Admixture for all integral colored concrete paving in medians and other integral colored concrete shall be the following:

Color: As specified on the plans or 2016 City of Carlsbad Landscape Manual. Match existing color if none specified.

Curing: Scofield Colorcure Concrete Sealer (or approved equal). See Section 201 for Concrete Curing Materials.

Manufacturer: Scofield Chromix Admixtures for color-conditioned concrete, or approved equal  
L.M. Scofield Company  
6533 Bandini Boulevard  
Los Angeles, CA 90040  
1-800-800-9900

Admixture products and procedures for installation shall be in strict accordance with the manufacturer's specifications and recommendations, and those published by the American Concrete Institute (ACI) and the Portland Cement Association (PCA).

## SECTION 304 – METAL FABRICATION AND CONSTRUCTION

### 304-3 CHAIN LINK FENCE.

Add the following:

Contractor shall install chain link railing in accordance with CTSP B11-7.

## SECTION 306 – OPEN TRENCH CONDUIT CONSTRUCTION

### 306-5 DEWATERING.

ADD the following:

Dewatering shall be paid for as an incidental to unclassified excavation and no additional compensation will be made therefore. Except for unsuitable materials removed as part of the clearing and grubbing item unsuitable material encountered below grade will be paid for at the unit price bid for unclassified excavation.



306-7 PREFABRICATED GRAVITY PIPE.

309-7.3 Reinforced Concrete Pipe (RCP).

306-7.3.2 Joints.

ADD the following:

The Contractor shall provide Gasket-type joints for reinforced concrete pipe (watertight joints) where indicated on plans.

306-8 PREFABRICATED PRESSURE PIPE.

306-8.8 Valves, Hydrants, and Appurtenances.

ADD the following:

306-8.8.6 Water Meter Boxes:

Water meter boxes shall be installed at locations as shown on the plans.

## SECTION 307 – JACKING AND TUNNELING

307-1 JACKING OPERATIONS.

307-1.3 Jacking Steel Casing.

DELETE the first paragraph and REPLACE with the following:

1. Unless otherwise shown on the Plans, the size and wall thickness of the casing to be jacked shall be at the Contractor's option, except that the casing thickness shall be not less than 3/8 inch (9.5 mm) and the casing and jacking operation shall meet all other requirements of the agency with permit jurisdiction of the installation. The Contractor shall be responsible for the sufficiency of the casing.

## SECTION 308 – MICROTUNNELING

308-6 SUBSURFACE CONDITIONS.

308-6.2 Microtunneling Requested by the Contractor.

DELETE in its entirety and REPLACE with the following:

1. When microtunneling is proposed by the Contractor as an alternative to the specified methods of conduit installation, the Contractor shall obtain copies of the information and reports listed in 3-9 and 308-6.3 and shall conduct independent investigations as necessary to substantiate the basis for the Contractor's proposal and submit in accordance with 3-8. Microtunneling operations must be approved by the Engineer prior to the start of microtunneling work.

ADD the following section:

## SECTION 312 - SIGNING

### 312-1 PERMANENT SIGNING

**312-1.1 General.** The Contractor shall provide and install all permanent traffic control signs at locations shown on the plans and as specified herein.

### 313-2 TEMPORARY TRAFFIC SIGNING.

#### 313-2.1 General.

The Contractor shall provide and install all temporary traffic control signs, markers, markings, and delineators at locations shown on plans and specified herein.

**313-2.2 Maintenance of Temporary Traffic Signs.** If temporary traffic signs are displaced or overturned, from any cause, during the progress of the work, the Contractor shall immediately replace the signs in their original approved locations. The Contractor shall maintain all temporary traffic signs used in the Work in a clean, reflective and readable condition. The Contractor shall replace or restore graffiti marked temporary traffic signs and posts used in the Work within 18 hours of such marking being discovered during non-working hours or, when the marking is discovered during working hours, within 2 hours of such discovery of marking.

### 313-3 TEMPORARY RAILING (TYPE K) AND CRASH CUSHIONS.

**313-3.1 Temporary Railing and Crash Cushions.** Temporary railing (Type K) shall consist of interconnected new or undamaged used precast concrete barrier units as shown on the plans. Temporary sand-filled crash cushions shall consist of new or undamaged used temporary sand-filled crash cushions units as shown on the plans.

**313-3.1.1 Appearance.** Exposed surfaces of new and used units of Temporary railing (Type K) shall be freshly coated with a white color paint prior to their first use on the project. The paint shall conform to the provisions in sections 210-1.5 "Paint Systems" and 310 "Painting". Contractor shall be responsible for the removal and cleanup or painting over the graffiti from the K-Rails within 48 hours. The Contractor Shall replace or repaint units of Temporary railing (Type K) or shall remove graffiti, tire or vehicle marks, dirt or any and all materials such that said marks or discoloration mar the appearance of said units when ordered by the Engineer after the units are in place.

**313-3.1.2 Manufacture of Temporary Railing.** In addition to the requirements herein the temporary railing (Type K) shall be manufactured per CALTRANS Standard Drawing T3. Concrete used to manufacture Temporary railing (Type K) shall conform to the provisions in sections 201-1, "Portland Cement Concrete" and 303-1 "Concrete Structures". Load tickets and a Certificate of Compliance will not be required. Reinforcing steel shall conform to the provisions sections

201-1, "Portland Cement Concrete" and 303-1 "Concrete Structures". Steel bars to receive bolts at ends of concrete panels shall conform to ASTM Designation: A 36/A 36M. The bolts shall conform to ASTM Designation: A 307. A round bar of the same diameter may be substituted for the end-connecting bolt shown on the plans. The bar shall conform to ASTM Designation: A 36/A 36M, shall have a minimum length of 660 mm and shall have a 75 mm (3") diameter by 9 mm ( $3/8$ ") thick plate welded on the upper end with a 5-mm ( $3/16$ ") fillet weld. The final surface finish of temporary railings (Type K) shall conform to the provisions in section 303-1.9.2 "Ordinary Surface Finish." Exposed surfaces of concrete elements shall be cured by the water method, the forms-in-place method, or the pigmented curing compound method. The pigmented curing compound shall be type 2 curing compound. Temporary railing (Type K) may have the Contractor's name or logo on each panel. The name or logo shall not be more than 100 mm in height and shall be located not more than 300 mm above the bottom of the rail panel.

**313-3.1.3 Installation of Temporary Railing.** In addition to the requirements herein the temporary railing (Type K) shall be installed per CALTRANS Standard Drawing T3. Temporary railing (Type K) shall be set on firm, stable foundation. The foundation shall be graded to provide a uniform bearing throughout the entire length of the railing. Abutting ends of precast concrete units shall be placed and maintained in alignment without substantial offset to each other. The precast concrete units shall be positioned straight on tangent alignment and on a true arc on curved alignment. Each rail unit placed within 3 m (10') of a traffic lane shall have a reflector installed on top of the rail as directed by the Engineer. Reflectors and adhesive will be furnished by the Contractor. A Type P marker panel conforming to the requirements of the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) 2003 Edition as amended by the MUTCD 2003 California Supplement shall also be installed at each end of railing installed adjacent to a two-lane, two-way highway and at the end facing traffic of railing installed adjacent to a one-way roadbed. If the railing is placed on a skew, the marker shall be installed at the end of the skew nearest the traveled way. Type P marker panels shall conform to the provisions of section 206-7.2, "Temporary Traffic Signs". Where shown on the plans, threaded rods or dowels shall be bonded in holes drilled in existing concrete. When temporary railings (Type K) are removed, any area where temporary excavation or embankment was used to accommodate the temporary railing shall be restored to its previous condition or constructed to its planned condition.

**313-3.2 Temporary Sand-Filled Crash Cushions.** Temporary sand-filled crash cushion units shall be "Energite III" manufactured by Energy Absorption Systems, "Fitch Inertial Barrier System Modules" manufactured by Roadway Safety Service, or equal. Features required to determine equivalence of any other temporary sand-filled crash cushion units shall be approval of the system by CALTRANS and that the temporary sand-filled crash cushion units meet NCHRP 350 standards. Other features will be suitability to application, operational characteristics, durability and other such characteristics that the Engineer shall determine. Temporary sand-filled crash cushions (TSFCC) shall be of the type and array configurations shown on plans, and installed at every end of, or gap in, the temporary railing (Type K) whenever the closest point of approach of

traffic, regardless of direction, is 4.6 m (15') or less to the end of the temporary railing (Type K) being considered. The TSFCC shall be installed per CALTRANS Standard Drawings T1 and T2 for approach speeds no less than the posted speed of the street prior to construction or 55 kilometers per hour (35 mph), whichever is the greater. The TSFCC array shall be appropriate to the application as shown on said standard drawings. A Type J and/or P marker panel conforming to the requirements of the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) 2003 Edition as amended by the MUTCD 2003 California Supplement shall also be installed at each TSFCC array as shown in CALTRANS Standard Drawings T1 and T2. Particular care shall be taken to assure that crash cushions are installed with the soil supporting them and the adjacent soil leveled to match the elevation of the bottom of the temporary railing immediately adjacent to the crash cushion. All routes of approach to the TSCFF array shall be graded such that any vehicle diverging from the travelled way to strike the TSCFF will travel on a vertical alignment parallel to the segment of the travel lane that it departed from.

## SECTION 314 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS AND PAVEMENT MARKERS

### 314-2 REMOVAL OF TRAFFIC STRIPING AND CURB AND PAVEMENT MARKINGS.

#### 314-2.1 General.

DELETE in its entirety and REPLACE with the following:

1. The Contractor shall remove by wet grinding all existing or temporary traffic markings and lines that may confuse the public. When temporary detour striping or markings are no longer required, they shall be removed prior to painting the new traffic stripes or markings.
2. The Contractor shall remove all existing markings and striping, either permanent or temporary, which are to be abandoned, obliterated or that conflict with the Plans by wet grinding methods. Removal of striping by high velocity water jet may be permitted when there is neither potential of the water and detritus from the high velocity water jetting to damage vehicles or private property nor to flow from the street into any storm drain or water course and when approved by the Engineer.
3. The Contractor shall vacuum all water and detritus resulting from high velocity water jet striping removal from the pavement immediately after the water jetting and shall not allow such materials to flow in the gutter, enter the storm drain system or to leave the pavement surface. Surface variation limitations for high velocity water jet striping removal shall be the same as for grinding.
4. The Contractor shall not use dry or wet sandblasting in any areas. Alternate methods of paint removal require prior approval of the Engineer. Obliteration of traffic striping with black paint, light emulsion oil or any other masking method other than a minimum 30mm (0.10') thick asphalt concrete overlay is not permitted.

#### 314-2.2 and 314-2.3

REPLACE as follows:



### 314-2.2 Measurement and Payment.

1. Removal of traffic striping and curb and pavement markings as shown on the Plans and required by the Specifications shall be included in the lump-sum price Bid for “Temporary Traffic Control” and “Striping Removal” for temporary and final traffic striping, and no additional compensation will be allowed, therefore. Reapplication of temporary stripes and markings shall be repainted at the Contractor's expense, and no additional compensation will be allowed for the repainting. The lump sum Bid shall include all labor, tools, equipment, materials, and incidentals for doing all Work in installing the final and temporary traffic striping.

### 314-3 REMOVAL OF PAVEMENT MARKERS.

#### 314-3.2 and 314-3.3

REPLACE as follows:

#### 314-3.2 Measurement and Payment

1. Removal of pavement markers as shown on the Plans and required by the Specifications shall be included in the lump-sum price Bid Bid for “Temporary Traffic Control” and “Striping Removal” for temporary and final traffic striping, and no additional compensation will be allowed, therefore. Reapplication of temporary stripes and markings shall be repainted at the Contractor's expense, and no additional compensation will be allowed for the repainting. The lump sum Bid shall include all labor, tools, equipment, materials, and incidentals for doing all Work in installing the final and temporary traffic striping.

### 314-4 APPLICATION OF TRAFFIC STRIPING AND CURB AND PAVEMENT MARKINGS.

#### 314-4.3.6 and 314-4.3.7

REPLACE as follows:

#### 314-4.3.6 Measurement and Payment.

1. Final and temporary traffic striping, curb markings and pavement markings as shown on the Plans and required by the Specifications shall be included in the lump-sum price Bid for “Temporary Traffic Control” and “Striping and Markings” for temporary and final traffic striping, and no additional compensation will be allowed, therefore. Reapplication of temporary stripes and markings shall be repainted at the Contractor's expense, and no additional compensation will be allowed for the repainting. The lump sum Bid shall include all labor, tools, equipment, materials, and incidentals for doing all Work in installing the final and temporary traffic striping.

#### 314-4.4.5 and 314-4.4.6

REPLACE as follows:

#### 314-4.4.5 Measurement and Payment.

1. Thermoplastic traffic striping and pavement markings as shown on the Plans and required by the Specifications shall be included in the lump-sum price Bid for “Temporary Traffic Control” and “Striping and Markings” for temporary and final traffic striping, and no additional compensation will be allowed, therefore. Reapplication of temporary stripes and markings

shall be repainted at the Contractor's expense, and no additional compensation will be allowed for the repainting. The lump sum Bid shall include all labor, tools, equipment, materials, and incidentals for doing all Work in installing the final and temporary traffic striping.

#### 314-5 PAVEMENT MARKERS.

##### 314-5.6 and 314-5.7

REPLACE as follows:

##### 314-5.6 Measurement and Payment.

1. Pavement markers as shown on the Plans and required by the Specifications shall be included in the lump-sum price Bid for "Temporary Traffic Control" and "Striping and Markings" for temporary and final traffic striping, and no additional compensation will be allowed, therefore. Reapplication of temporary stripes and markings shall be repainted at the Contractor's expense, and no additional compensation will be allowed for the repainting. The lump sum Bid shall include all labor, tools, equipment, materials, and incidentals for doing all Work in installing the final and temporary traffic striping.

ADD the following section:

## SECTION 315 – SITE FURNISHINGS

315-1 GENERAL. The Contractor shall furnish, install, and relocate all site furnishings to the locations shown on the Plans or as directed by the City.

315-2 SALVAGE AND REUSE EXISTING SITE FURNISHINGS. The contractor shall salvage and relocate existing site furnishings as shown on the Plans. If existing furnishings are damaged during the relocation, Contractor shall, at its expense, purchase and install new site furnishings to the location shown on the Plans or as directed by the City.

## PART 4 EXISTING IMPROVEMENTS

### SECTION 400 – PROTECTION AND RESTORATION

#### 400-2 PERMANENT SURVEY MARKERS.

ADD the following:

1. The Contractor shall not cover or disturb permanent survey monuments or benchmarks without the consent of the Engineer. Where the Engineer concurs, in writing, with the Contractor that protecting an existing monument in place is impractical, the Contractor shall employ a licensed land surveyor or a registered civil engineer authorized to practice land surveying within the State of California (“Surveyor”) to establish the location of the monument before it is disturbed. The Contractor shall have the monument replaced by the Surveyor no later than 30 Calendar Days after construction at the site of the replacement is completed. The Surveyor shall file corner record(s) as required by Business and Professions Code Sections 8772 and 8773 *et seq.*.
2. When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the Contractor shall adjust the monument frame and cover to the new grade within 7 Calendar Days of paving unless the Engineer shall approve otherwise. Monument frames and covers shall be protected during street sealing or painting projects or be cleaned to the satisfaction of the Engineer.

### SECTION 401 – REMOVAL

#### 401-2 ASPHALT CONCRETE PAVEMENT.

DELETE in its entirety and REPLACE with the following:

1. Asphalt concrete pavement shall be removed to clean, straight lines. Removal performed by cold milling shall conform to 404. Adjacent AC/AB sawcut and removal associated with concrete construction shall be full depth and a minimum width of 12 inches from face of concrete edge and continue along the concrete scheduled for removal. Removal and disposal of adjoining AC/AB section shall be incidental to the removal of concrete structure Bid item per this Section. Replacement of adjoining AC/AB section shall be incidental to replacement of the concrete.

#### 401-3 CONCRETE AND MASONRY IMPROVEMENTS.

##### 401-3.2 Concrete Curb, Walk, Gutters, Cross Gutters, Curb Ramps, Driveway and Alley Intersections.

DELETE in its entirety and REPLACE with the following:

1. Concrete shall be removed to neatly sawed edges with saw cuts made through the entire thickness. Concrete sidewalk or driveway to be removed shall be neatly sawed in straight lines either parallel to the curb or at right angles to the alignment of the sidewalk. No section to be replaced shall be smaller than 30 inches (750 mm) in either length or width.

All existing concrete shall be removed to the nearest joint. Concrete shall be removed to neatly sawed edges with saw cuts made to a depth deep enough to produce a clean straight break without loosening, cracking or damaging adjoining improvements. Curb and gutter shall be sawed on a neat line at right angles to the curb face. PCC and all other material unsuitable for use as fill, as determined by the Engineer, shall be removed from the right-of-way and disposed of by the Contractor at a site of his own choice and shall pay all costs incidental to the disposal.

ADD the following:

#### 401-3.2.1 Adjacent Asphalt Concrete (AC/AB) Sawcut and Removal.

1. Adjacent AC/AB sawcut and removal associated with concrete construction shall be full depth and a minimum width of 12 inches from face of concrete edge and continue along the concrete scheduled for removal. Removal and disposal of adjoining AC/AB section shall be incidental to the removal of concrete structure Bid item per this Section. Replacement of adjoining AC/AB section shall be incidental to replacement of the concrete as specified in Section 303-5.

## SECTION 402 – UTILITIES

### 402-1 LOCATION.

#### 402-1.1 General.

DELETE the first paragraph and REPLACE with the following:

1. Known utilities and their respective owners are shown on the Plans or specified in the Special Provisions and their locations are based on available records. The accuracy and/or completeness of the utilities shown on the Plans is not guaranteed and actual locations must be confirmed by potholing. Where underground utilities are shown on the Plans, the Contractor shall assume every property parcel will be served by a service connection for each type of utility.

INSERT, after the first sentence of the third paragraph, the following:

Subsurface installations shall be located at least 5 Working Days and at least 500 feet in advance of any construction heading and the results reported in written form to the Engineer.

AMEND letter d) to read as follows:

d) horizontal location with reference to Project stationing.

### 402-2 PROTECTION.

DELETE the first 3 paragraphs and REPLACE with the following:

1. The Contractor shall not interrupt the service function or disturb the support of any utility without authority from the utility owner or direction from the Engineer. Valves, switches, vaults, and meters shall be maintained readily accessible for emergency shutoff. Excavation



of soils providing support to pressure pipeline thrust blocks may require isolation and depressurization of the pipeline prior to the installation of support devices and the Contractor shall coordinate such Work with the utility owner.

2. Where a vertical separation distance of 12 inches cannot be attained between a proposed utility and an existing utility greater than 4 inches in diameter, place a 1-inch thick neoprene or silicone pad with Shore A durometer hardness of 50 to 70 (ASTM D2240) in contact with the top of the lower utility and backfill with Portland cement concrete sand conforming to 203-1.5.5 to 3 inches above the bottom of the upper utility. The width of the pad shall be equal to the width of the trench and the length shall extend 1 foot beyond the outer limits of the existing utility.
3. Where protection is required to ensure support of utilities located as shown on the Plans or in accordance with 402-1, the Contractor shall, unless otherwise specified, furnish and place the necessary protection at its expense.
4. Upon learning of the existence and location of any utility omitted from the Plans, the Contractor shall immediately notify the Engineer in writing. When authorized by the Engineer, support or protection of the utility will be paid for as provided in 7-3 or 7-4.

#### 402-4 RELOCATION.

DELETE paragraphs 3 and 4 and REPLACE with the following:

1. When the Plans or Special Provisions provide for the Contractor to alter, relocate, or reconstruct a utility, all costs for such Work, including temporary utility service, shall be included in the Bid for the items of Work necessitating such Work. Temporary or permanent relocation or alteration of utilities requested by the Contractor for its convenience shall be its responsibility and it shall make all arrangements and bear all costs.
2. The Contractor will relocate service connections as necessary within the limits of the Work or within temporary construction or slope easements in accordance with the procedures and upon the approval of the utility owner. When directed by the Engineer, the Contractor shall arrange for the relocation of service connections as necessary between the meter and property line, or between a meter and the limits of temporary construction or slope easements. Payment for the relocation of such service connections shall be in accordance with 7-3 unless otherwise specified in the Bid. Payment will include disconnection of existing service connections from the utility main, capping or plugging existing outlets on the utility main, abandoning the service connection, and the restoration of all existing improvements which may be affected by the service connection relocation. The Contractor may agree with the owner of any utility to disconnect and reconnect private interfering service connections. Unless otherwise specified in the Bid, disconnection and reconnection of private services will be outside of the scope of the Work and the Agency will not be involved in any such agreement.

Add the following:

The following arrangements shall be made with the utility companies to allow the utility owner to complete its relocation work.

Utility	Facility	Notification Days	Working Days
AT&T	Utility pole queen post/anchor adjustment, manhole grade adjustment	14	5
AT&T TCG	Handhole relocations and grade adjustments	7	15
Spectrum	Handhole and pedestal relocations and grade adjustments	7	15
Verizon	Handhole relocation	14	5

402-5 DELAYS DUE TO UTILITY CONFLICTS.

DELETE paragraphs 1 through 4 and REPLACE with the following:

1. The Contractor shall notify the Engineer of its Construction Schedule insofar as it affects the protection, removal, or relocation of utilities. The notification shall be included as a part of the Construction Schedule in accordance with 6-1 which shall be revised upon the completion of utility potholing and evaluation for potential utility conflicts. The Contractor shall notify the Engineer in writing of any subsequent changes in the Construction Schedule which will affect the time available for protection, removal, or relocation of utilities.
2. The Contractor will not be entitled to damages or additional payment for delays attributable to utility relocations or alterations if correctly located, noted, and completed in accordance with 402-1.
3. The Contractor may be given an extension of time for unforeseen delays attributable to unreasonably protracted interference by utilities in performing Work correctly shown on the Plans.
4. The Agency will determine the scope of Work for the removal, relocation, or protection of existing main or trunk line utility facilities within the area affected by the Work if such utilities are not identified in the Contract Documents. The Contractor will not be assessed liquidated damages for any delay caused by the removal, relocation, or protection of such existing facilities.

402-6 COOPERATION.

DELETE in its entirety and REPLACE with the following:

1. When necessary, the Contractor shall so conduct its operations as to permit access to the Work Site by the Agency or the utility owner and provide time for utility Work to be accomplished during the progress of the Work. The contractor shall coordinate their work with all respective utility agencies. The Contractor shall immediately notify utility agencies when an existing utility is damaged by the Contractors operation or found to be damaged during the course of the work. The following utilities and their respective owners are listed below:

Facility Type:

Communications  
Communications  
Communications  
Electric  
Gas  
Fuel  
Water  
Sewer  
Storm Drain  
Traffic Signals

Utility Owner:

AT&T  
Spectrum  
Verizon  
San Diego Gas and Electric  
San Diego Gas and Electric  
Kinder Morgan Energy Partners  
City of Carlsbad  
City of Carlsbad  
City of Carlsbad  
City of Carlsbad

Utility Agency Business Contacts, Non-Emergency:

AT&T	(619) 237-2787
Spectrum Cable	(800) 227-2600
Verizon	(619) 510-9215
San Diego Gas and Electric	(800) 411-7343
Kinder Morgan Energy Partners	(713) 420-6707
City of Carlsbad (Streets and Storm Drain)	(760) 434-2980
City of Carlsbad (Sewer, Water, & Reclaimed Water)	(760) 438-2722

## SECTION 403 - MANHOLE ADJUSTMENT AND RECONSTRUCTION

### 403-1 GENERAL.

DELETE in its entirety and REPLACE with the following:

1. Wet utility (water, recycled water, sewer and storm drain) manhole and vault frames and covers and valve box frames and covers within an area to be paved or graded shall be set to finish grade by the Contractor.
2. The Contractor shall remove all debris from the interior of manholes and vaults and shall clean all foreign material from the top of the frames and covers.

### 403-3 MANHOLES IN ASPHALT CONCRETE PAVEMENT.

DELETE in its entirety and REPLACE with the following:

1. Wet utility structures extending 2 inches (50 mm) or more above the new subgrade shall be lowered by the Contractor to the new subgrade before construction of the pavement section. Other structures shall be lowered by their owners unless otherwise specified or shown on the Plans. Structures projecting less than 2 inches (50 mm) above the subgrade may be surveyed and covered for construction of the pavement section and later adjusted to grade. The top of reset manholes and other structures shall conform to the smoothness requirement specified in 302-5.6.2.
2. All structures from which manhole frames and covers have been removed to facilitate pavement section construction shall be temporarily covered with a steel plate by the

Contractor. When this procedure is impractical, such as for large vaults, or special structures, remodeling or reconstruction shall be completed to finish permanent surface prior to paving operations.

3. The Contractor shall notify utility owners at least 21 Calendar Days in advance of the need to commence Work required prior to paving operations and again for Work required after paving operations. If the Engineer determines the utility owner will not complete adjustment of its facilities within 10 Working Days of the completion of the surface course of pavement, the facilities will be adjusted by their owner under a separate procedure established by the Agency.
4. After the pavement has been completed, the necessary portions of the subgrade, base, and pavement shall be neatly removed, the structure built up, and the manhole or vault frame or valve box set to within 1-1/2 inches (37.5 mm) of finish pavement surface with concrete pavement conforming to 201-1 and 302-6. The Contractor shall fill the remaining 1-1/2 inches (37.5 mm) with the asphalt concrete surface course mixture. This material shall be placed and compacted to conform to the appearance, grade, density and smoothness of the surrounding pavement.

#### 403-4 MEASUREMENT.

DELETE in its entirety and REPLACE with the following:

1. Manhole, vault or valve box adjustment and reconstruction of the type specified will be measured by each.

#### 403-5 PAYMENT.

DELETE in its entirety and REPLACE with the following:

1. Raising and adjusting to grade all City-owned or CMWD-owned appurtenances in the roadway shall be paid for at the Contract Unit Price per each as shown in the Bid. Such price shall constitute full compensation for all labor, materials, and equipment necessary for completing the Work as described in these Specifications and Plans. Other agencies will be responsible for their own appurtenances.
2. Payment for adjusting valve boxes to grade will be made at the Contract Unit Price for adjusting each valve box regardless of the height of the adjustment.

## SECTION 404 – COLD MILLING

#### 404-12 PAYMENT.

ADD the following:

No extra payment will be made for milling or disposing of existing geotextile, geogrid, or pavement fabric shown on the plans.



## PART 5 PIPELINE SYSTEM REHABILITATION

### SECTION 500 – PIPELINE REHABILITATION

#### 500-1 GENERAL.

DELETE in its entirety and REPLACE with the following:

1. Pipeline rehabilitation shall include all labor, materials, equipment and services and shall consist of cleaning, preliminary inspection, sewage bypass and pumping, service lateral identification, point repairs, lining, end seals, and service connection re-establishment.
2. Pipe rehabilitation shall be conducted in the host pipe per the manufacturer's recommendations and the Contractor's approved Performance Work Statement, applicable ASTM standards and as specified in this part.
3. The Contractor shall be responsible for confirming the locations of all active branch service connections prior to pipe rehabilitation and shall conduct dye tests to verify abandoned services as necessary. In the event the status of a service connection cannot be determined, the Agency will make the final decision prior to installation of the liner. Only service connections determined to be active shall be reinstated by the Contractor.
4. All materials furnished as part of the Work shall be marked with detailed product information and shall be accompanied by test reports certifying that the material conforms to the requirements stated in this part. Materials shall be certified by the manufacturer for the specified purpose.
5. Materials shall be stored in a manner specified or approved by the manufacturer to avoid damage. Damage includes, but is not limited to, gouging, abrasion, flattening, cutting, puncturing or UV degradation. On site storage locations shall be approved by the Agency.
6. The Agency reserves the right to inspect all or portions of the completed Work at any time during the warranty period. Any defect that is discovered during the warranty period which may materially affect the integrity, strength, function and/or operation of the pipe shall be repaired and/or replaced by the Contractor in accordance with the Contract Documents at no additional cost to the Agency. The Contractor shall provide a warranty for the repair for a period of 1 year following the date of repair.

#### 500-2 SUBMITTALS.

AMEND letter j) to read as follows:

- j) The proposed grouting method, locations and procedures.

ADD the following:

##### 500-2.1 CIPP Product Submittal.

1. Provide manufacturer's data, descriptions and physical properties of all product components including:
  - a. Certification from the manufacturer that the product has been successfully installed in at least 300,000 lineal feet of pipe in municipal wastewater collection systems and verifying that the chemical resistance of the CIPP meets the Contract requirements.
  - b. Fabric tube consisting of felts and reinforcing materials and the nominal void volume in the felt fabric that will be filled with resin.

- c. Raw resin data and flexible membrane (coating) material and the methods and procedures to be implemented for curing and repairs.
- d. Shipping, storage and handling recommendations for all components of the CIPP system.
- e. Safety Data Sheets (SDS) for all materials.

ADD the following:

#### 500-2.1.1 Design Calculations.

1. Submit engineering design calculations conforming with Appendix X1 of ASTM F1216. Calculations for liner thickness shall be performed by a qualified Professional Engineer and based on the most severe line condition for each pipe size which shall apply to all other sections to be lined unless otherwise approved by the Engineer. Submit calculations for the quantity of resin required to completely saturate the tube.
2. Design of the CIPP shall be based on the prism load using the outside diameter of the CIPP in the calculations. The CIPP design shall assume no bonding to the original pipe. An analysis of design criteria and calculations for the liner thickness shall be submitted to the Engineer for approval. The CIPP design shall be based on the following:
  - a. Corrosion resistance to the typical chemicals found in municipal sewage systems as defined in the referenced and applicable ASTM standards.
  - b. Service life: 50 years
  - c. Design safety factor: 2.0
  - d. Long-term modulus of elasticity: maximum of 50 percent of initial flexural modulus unless substantiated by third-party test data
  - e. Ovality: 2 percent or as measured by field inspection
  - f. Constrained Soil Modulus: per AASHTO LRFD Section 12 and AWWA Manual M45
  - g. Dead load: 120 lb./cu. ft. (minimum) or per geotechnical report
  - h. Live load: AASHTO HS-20 (minimum) or railroad, if applicable. Include impact factors when depth of cover is less than 5 feet for vehicle loads or less than 10 feet for railroad.
  - i. Other loads: based on local conditions such as hydrostatic pressure or surcharge loads.

ADD the following:

#### 500-2.2 Performance Work Statement.

1. The Contractor shall submit a PWS which clearly defines the liner product installation in conformance with these requirements. Unless otherwise specified, the PWS shall at a minimum contain the following:
  - a. A description of the proposed pipe rehabilitation technology including a detailed plan for identifying all active service connections and maintaining service to each connection during mainline pipe rehabilitation, unless otherwise approved by the Engineer.
  - b. Verification from the manufacturer of the rehabilitation process or system that the installer is authorized or certified to install the proposed product. The Contractor shall provide verification of training for all personnel directly involved with installation.
  - c. A statement of the Contractors experience in pipe rehabilitation involving pipe of similar size, length and configuration as proposed for the Work and conducted within the past 5 years and substantiated with verifiable project references.

- d. A listing of the superintendent, foreman and lead crew personnel experienced with the pipe rehabilitation technology proposed for the Work with demonstrated competency and experience in CCTV inspection, all phases of liner installation and service reconnections. Personnel replaced during the performance of the Work shall have similar, verifiable experience as the personnel originally submitted for the Project.
- e. A detailed installation plan describing all preparation work, traffic control, cleaning operations, pre-installation CCTV inspections, bypass pumping, tube wet-out procedure, liner installation procedures, method of curing, temperature monitoring methods and procedures, service reconnection, grouting, final CCTV inspection, warranties and all incidental work or services necessary for a complete installation. Identify and describe the tools and equipment which will be redundant on the Job Site in the event of equipment malfunction. Describe the mitigation procedures to be implemented in the event of key equipment failure or significant groundwater infiltration during the installation process or for removal of blockages that may be encountered during the pipe cleaning process.
- f. A detailed installation schedule conforming to the requirements of the Contract.

ADD the following:

#### 500-2.3 Quality Control Plan.

1. The QCP shall include:
  - a. A detailed discussion of the proposed quality controls to be performed by the Contractor.
  - b. Defined responsibilities of the Contractor's personnel.
  - c. Proposed methods for product performance controls, including the methods and frequency of product sampling, testing in both raw material form and cured product form, and repair of test locations in the pipe liner.
  - d. Specific repair or replacement procedures approved by the system manufacturer for potential defects that may occur in the installed liner. The plan shall define defects that will not affect the operation and long-term life of the product, repairable defects and the repair procedures, and unreparable defects and procedures for removal and replacement of the liner.
  - e. Inspection forms and guidelines for quality control inspections in accordance with the standards specified and submitted with the QCP. Furnish a check list of key elements of the installation criteria to ensure that quality control and testing are performed in accordance with the Contract Documents.
  - f. Proposed frequency of meetings to discuss performance and product test results with the Agency.
2. For Projects involving more than 2,000 linear feet of CIPP, the Contractor shall schedule and provide, at no cost to the Agency, 2 Working Days of training by the CIPP system manufacture for the Agency's inspector prior to liner installation. Training shall include field instruction and all key aspects of visual inspection and sampling procedures.

ADD the following:

#### 500-2.4 As-Built Records.

1. Submit 1 set of Plans annotated with the as-built information and identification of Work performed and other records acceptable to the Engineer prior to final acceptance of the Work by the Agency.
2. As-built drawings and records shall include all necessary information as outlined in the PWS or as agreed to by the Agency. Records shall include pre and post inspection video; locations of obstructions, groundwater or other conditions encountered; locations of test coupons and service connections; liner type and thickness; and temperature and/or light train sensor data from data loggers. The records shall be updated by the Contractor as the Work progresses, shall be clearly legible and shall indicate the locations of the Work performed each day.

#### 500-3 CLEANING AND PRELIMINARY INSPECTION.

##### 500-3.1 General.

ADD the following:

1. The Contractor shall either plug or install a flow bypass pumping system to properly clean the host pipe and shall utilize cleaning equipment and procedures that will not damage the pipe. The Contractor shall repair any damage to the pipe resulting from the cleaning operations as approved by the Engineer and at no additional cost to the Agency.
2. Upon the completion of pipe cleaning, the Contractor shall verify the inside pipe diameter, length and site conditions of each pipe segment and include the data collected in the pipe rehabilitation design.

##### 500-3.4 Closed Circuit Television (CCTV) Inspection.

DELETE the first paragraph and REPLACE with the following:

1. Prior to rehabilitation, a post-cleaning CCTV inspection shall be performed by PACP certified personnel trained in locating breaks, obstacles and service connections using CCTV. The Contractor shall submit the post-cleaning video for review prior to installation of the CIPP and for later reference by the Agency. Video inspections shall be recorded on a digital storage device. All original digital recordings, log sheets, and reports shall be submitted to the Engineer and will become the property of the Agency.

#### 500-4 PIPELINE POINT REPAIR AND/OR REPLACEMENT.

##### 500-4.6 Measurement.

DELETE in its entirety and REPLACE with the following:

1. Pipeline point repair/replacement will be measured along the longitudinal axis between the ends of the pipeline point repair and/or replacement completed and shall not include the inside dimensions of structures.

##### 500-4.7 Payment.

DELETE the first sentence and REPLACE with the following:



1. The Contract Unit Price per linear foot (m) or lump sum for pipeline point repair and/or replacement shall include furnishing and installing all fittings, connections, seals, and special Work shown on the Plans or required in the Specifications.

#### 500-5 LINING.

##### 500-5.2 Service Connection Locations.

DELETE the third sentence and REPLACE with the following:

1. The Contractor shall provide interim sewer service unless otherwise shown on the Plans or specified in the Special Provisions.

##### 500-5.3 Sewage Bypass and Pumping.

DELETE in its entirety and REPLACE with the following:

1. The lining systems specified in 500-5.8, 500-5.11, and 500-5.12 may be installed while flow exists in the host pipeline, without diverting the flow or bypass pumping. The Contractor shall consider the effects of varying flow levels on the buoyancy calculations to be submitted.
2. The Contractor shall bypass the sewer flow around the Work and dewater the Work area in accordance with 3-12.5, 3-12.6.4, and 306-5. The Contractor shall submit a sewage bypass and pumping plan in accordance with 3-8.
3. Service connections may be plugged only when approved by the Engineer, when the procedures are described in the Contractor's Performance Work Statement, and after the affected residence or business is notified. The Contractor shall notify the Agency at least 14 Calendar Days in advance of sewer bypass operations or flow interruptions and provide written notice to each residence or business 48 hours prior to interruption of the customer's sewer service. The notice shall include the date and duration of the interruption and a 24-hour contact telephone number to report any problems which could arise. Service connections must be re-established within the same Working Day unless otherwise approved by the Engineer. The Contractor shall notify the Engineer and the residence or business of any sewer service which cannot be reconnected within the time stated in the written notice.
4. Installation of the liner shall not begin until the Contractor has installed the required plugs and/or a sewage bypass system and all pumping facilities have been installed and tested. Flow bypassing shall be maintained until the rehabilitated pipe is returned to service in accordance with the approved procedures.

##### 500-5.5.1 General.

ADD the following:

1. The Contractor is responsible for field verification of the Site conditions, host pipe inside diameter, and complete installation of the CIPP using the system selected by the Contractor and meeting the requirements specified in this part.
2. The finished CIPP shall be continuous and jointless from manhole to manhole or access point to access point and shall be free of all defects that will affect the long-term life and operation of the pipe. The layers of completed CIPP shall be uniformly bonded with no separation between any 2 layers under the action of a probe or knife blade.

3. The CIPP shall fit tightly within the existing pipe with no leaks at the manholes or service connections or through the wall of the installed pipe. If leakage occurs at any location, the Contractor shall seal the areas to stop all leakage using a material compatible with the CIPP as directed by the Engineer. If leakage occurs through the wall of the pipe, the CIPP liner shall be repaired or removed as recommended by the manufacturer. Final approval will be based on a leak-tight pipe that meets or exceeds all specified physical properties and tolerances specified.
4. Testing and warranty inspections shall be coordinated with the Agency and executed by the Contractor. Any defects discovered during the warranty period shall be repaired or replaced by the Contractor.

#### 500-5.5.2 Material Composition and Testing.

ADD the following:

1. All materials testing shall be performed at the Contractor's expense by an independent third-party laboratory recommended by the CIPP manufacturer and approved by the Agency.
2. The installed CIPP thickness shall be measured in accordance with Section 8.1.6 of ASTM F1743 for each section of liner. The average thickness shall meet or exceed the thickness calculated in the approved design. The minimum thickness at any point shall not be less than 87.5 percent of the design thickness. CIPP that does not meet the physical or chemical resistance properties required shall be repaired or removed unless additional testing performed by the Contractor demonstrates compliance.
3. All curing, cutting and identification of samples will be witnessed by the Agency and transmitted by the Contractor to the testing laboratory. The Contractor shall maintain the chain of custody, deliver the samples to an approved laboratory and pay for all material and product testing.
4. On pipes larger than 18 inches in diameter, the Agency may, at its discretion, require plate samples cured with the CIPP or designate a location in the newly installed CIPP where the Contractor shall take a sample. Plate samples will be supplemented by 2-inch diameter core samples removed from the soffit of the CIPP by the Contractor. The openings produced from the core samples shall be repaired in accordance with the manufacturer's recommended procedures. Laboratory test results shall identify the test sample location as referenced to the nearest manhole and station. If test results do not demonstrate compliance with the minimum physical and thickness requirements, the CIPP shall be repaired or replaced by the Contractor.

#### 500-5.5.3 Resin and Tube Acceptance.

ADD the following:

1. A roller and vacuum system shall be used to uniformly distribute the resin and completely saturate the tube prior to deployment for installation. The wet-out fabric tube shall have a uniform thickness and excess resin distribution that, when compressed at installation pressures, will meet or exceed the design thickness after cure with allowances for polymerization shrinkage and anticipated loss of resin through cracks and irregularities in the host pipe wall.

2. The wall color of the interior pipe surface of CIPP after installation shall be a light reflective color. The hue of the color shall be dark enough to distinguish a contrast between the fully resin saturated felt fabric and dry or resin-lean upon CCTV inspection. The wet-out fabric tube shall be rejected if dry or unsaturated areas are visible upon inspection or evident by color contrast between the tube fabric and the activated resin.

#### 500-5.5.5 Installation.

ADD the following:

1. Prior to installation of the liner and as recommended by the manufacturer, remote temperature gauges or sensors shall be placed inside the host pipe to monitor the temperatures during the cure cycle. Liner and/or host pipe interface temperature shall be monitored and logged during curing of the liner.
2. The wet-out tube shall be positioned in the pipeline using the method specified or approved by the manufacturer. Care should be exercised not to damage the tube during installation. The liner should be pulled-in or inverted through an existing manhole or approved access point and fully extend to the next manhole or termination point.

#### 500-5.5.6 Curing.

ADD the following:

1. Curing shall be accomplished by utilizing the appropriate medium in accordance with the manufacturer's recommended cure procedure as described in the Contractor's approved Performance Work Statement. The curing source or in and output temperatures shall be monitored and logged during the cure cycles, as applicable. The manufacturer's recommended cure method and schedule shall be followed for each line segment, accounting for liner wall thickness, ground temperature, moisture level, soil thermal conductivity per ASTM guidelines, as applicable.
2. Continuous temperature monitoring of heat cured liners shall be performed with a system computer that generates an output report that records stationing along the pipe, maximum temperature achieved, the sustained temperature, and the minimum cool down temperature. The temperatures during curing and cool down procedures shall comply with the manufacturer's recommendations.
3. For ultraviolet light cured liners, all light train sensor readings shall be monitored and recorded by a tamper proof computer with output report documenting the cure along the entire length of the installed liner. The cure procedure shall be in accordance with the manufacturer's recommendations.

#### 500-6 END SEALS.

DELETE in its entirety and REPLACE with the following:

1. The beginning and end of the new pipe liner shall be sealed to the host pipe with an epoxy or other approved material. The epoxy or other material shall conform to 211-2. The approved epoxy or other material shall be compatible with the lining material and host pipe and shall provide a watertight seal.
2. The finished liner shall protrude a minimum of 1 inch (25 mm) and a maximum of 2 inches (50 mm) into a manhole unless otherwise shown on the Plans or specified in the Special

Provisions. Liner material shall be cut smooth and parallel with a manhole wall. The interface between the host pipe and the pipe liner shall be sealed 360 degrees.

3. When the pipe liner extends through a manhole, it shall be sealed as shown on the Plans and as specified in the Special Provisions. Any exposed liner edges along the manhole shelf shall be sealed.

#### 500-8 SERVICE CONNECTION RE-ESTABLISHMENT.

DELETE in its entirety and REPLACE with the following:

1. Service connections shall be re-established on the same day after completion of each liner pipe installation in the main line using a remote-controlled device. If any service connection cannot be re-established with a final cut, as specified in this part, on the same day, it shall be opened on the same day with a temporary, smooth cut with a diameter of 1 inch smaller than the diameter of the lateral. Service connections shall be re-established with a final cut within 3 Calendar Days of interruption of service. The bottom of the reinstated service opening shall match the invert of the service connection, the diameter shall be no less than 95 percent of the original diameter, and the new edge shall be smooth with no loose or abraded material and free of cracks or leaks.
2. The Contractor shall have a fully operational, backup, remote-controlled device on site. If for any reason the Contractor is unable to remotely re-establish the service connections, the Contractor shall re-establish each by open cut within 24 hours and maintain sewer service during this period at no additional cost to the Agency.
3. Services requiring bypasses to be provided by the Contractor will be identified in the Special Provisions.

#### 500-11 MEASUREMENT.

DELETE in its entirety and REPLACE with the following:

1. Lining will be measured by the linear foot (m) of liner installed, from center to center of manholes for each pipe segment.

#### 500-12 PAYMENT.

DELETE in its entirety and REPLACE with the following:

1. Payment for lining will be made at the Contract Unit Price per linear foot (m) for each diameter size of pipeline to be lined, complete in place, in accordance with the Contract Documents. Correction of failed liner or liner that does not meet the tests or performance criteria specified shall be performed by the Contractor at no additional cost to the Agency.
2. The Contract Unit Price shall include;
  - a. sewage bypass and pumping,
  - b. service connection location and re-establishment,
  - c. verification of abandoned service connections,
  - d. construction and restoration of access pits, if proposed,
  - e. annular space grouting, if required,
  - f. sampling and testing, and



- g. all other Work not covered by other Bid items including all Work or services not specifically mentioned but which are required to install the final product, complete, in accordance with the Contract Documents.

## SECTION 502 – MANHOLE AND STRUCTURE REHABILITATION

### 502-2 SUBMITTALS.

DELETE items c) & d) and REPLACE with the following:

- c) Certificate of Compliance for each type of liner and its component materials with the referenced standards.
- d) For structural lining systems, submit calculations for structural loading and wall thickness design signed and sealed by a Professional Engineer.

### 502-4 REPAIR, RESURFACING, AND ACTIVE INFILTRATION ELIMINATION.

#### 502-4.2 Repair.

DELETE in its entirety and REPLACE with the following:

1. Prior to installation, patching or localized repairs shall be performed using rapid setting polymer repair mortars or other approved materials compatible with the lining system and intended for use in corrosive environments in municipal wastewater systems. Repair mortars shall be used to fill surface irregularities and voids and for repair of deteriorated or cracked surfaces in the host structure to a uniform surface. The edges of concrete surfaces shall be keyed or chamfered to avoid thin, tapered edges in the repair mortar. Manufacturer's specifications shall be followed when performing repairs, material handling, mixing, installation and curing.
2. Materials shall consist of rapid setting mixtures of polymer resins or cementitious materials, monocrystalline quartz aggregates, and activators or accelerating agents. Material shall not contain chlorides or metallic particles. Repair mortars shall have a minimum bond strength of 1,600 psi when tested to substrate failure per ASTM C882.
3. Non-resinous, cementitious repair mortar used in manhole base rehabilitation shall be top-coated with a polyurethane and epoxy lining per 502-5.3 or epoxy lining per 502-5.4.

### 502-5 LINING SYSTEMS.

#### 502-5.1.2.2 Integral Locking PVC Liner.

DELETE the second sentence and REPLACE with the following:

1. A Certificate of Compliance conforming to 4-5 shall be submitted to the Engineer.

#### 502-5.3.3 Installation and Curing.

DELETE the first sentence and REPLACE with the following:

1. Lining material shall be applied to all prepared surfaces from 1 inch (25 mm) below the low-flow water level to the base of the frame and cover unless otherwise specified.

#### 502-5.3.5 Testing.

DELETE the first sentence and REPLACE with the following:

1. The set or cured lining materials shall be tested in accordance with 502-6 unless otherwise specified.

#### 502-5.4.3 Installation and Curing.

DELETE the first sentence and REPLACE with the following:

1. Lining material shall be applied to all prepared surfaces from 1 inch (25 mm) below the low-flow water level to the base of the frame and cover unless otherwise specified.

#### 502-5.5.2.4 Locking Extensions.

DELETE the second sentence and REPLACE with the following:

1. The locking extensions shall have a shape, height, web thickness, and spacing that will allow the liner to be held permanently in place and meet the requirements of 502-5.5.5.

ADD the following:

#### 502-5.6 Polymer Concrete Structural Lining System.

##### 502-5.6.1 General.

1. This subsection specifies precast polymer concrete structural inserts installed inside of an existing manhole and filling the annular space with CLSM or Portland cement concrete resulting in a structural liner within the host structure, and installation of an external manhole chimney seal.

ADD the following:

##### 502-5.6.2 Materials.

ADD the following:

###### 502-5.6.2.1 Polymer Concrete Structural Insert.

1. The design shall meet or exceed the load and strength requirements of ASTM C478 and ASTM C857. Inserts shall be reinforced in accordance with ACI 440.1R-15.
2. Polymer concrete manhole inserts shall be furnished with alignment guides for centering. Inserts and cone sections shall be provided in various lengths to provide the required height with the fewest number of joints.
3. The polymer concrete structural insert will have a minimum wall thickness of 2 inches (50 mm) for insert diameters up to 60 inches (1524 mm). Wall thicknesses for larger outside diameters shall be verified by calculations in the product submittal. Outside diameter clearance to the wall of the host structure shall be a minimum of 1-1/2 inches (38 mm).
4. Manufacturer shall be ISO 9001:2008 certified and facility quality control shall adhere to ISO 9001:2015. Fabrication of polymer concrete components will take place in an all-polymer concrete production facility.

ADD the following:

###### 502-5.6.2.2 Portland Cement Concrete.

1. Portland cement concrete shall be Class 560-CSP-3250 (330-CSP-23) conforming to 201-1.1.2 unless otherwise specified.

ADD the following:

#### 502-5.6.2.3 Cement Mortar.

1. Cement mortar shall conform with Class C mortar per 201-5.

ADD the following:

#### 502-5.6.2.4 Controlled Low Strength Material.

1. CLSM shall conform with 201-6 and contain not less than 90 pounds of cement per cubic yard.

ADD the following:

#### 502-5.6.2.5 Joint Sealant.

1. Sealant for polymer concrete insert joints used in conjunction with CLSM annular backfill shall consist of a butyl-rubber-based preformed flexible sealant conforming to ASTM C990, paragraph 6.2. The sealant shall have 50% minimum butyl rubber and 2% or less volatile matter. The dimensions of the sealant shall be sized such that the joint is filled to at least 50% of its annular volume when fully assembled.

ADD the following:

#### 502-5.6.2.6 External Chimney Seal.

1. The external chimney seal shall be specifically designed to seal the frame and grade ring joints in municipal wastewater manholes. The seal shall consist of a continuous seamless band of EPDM rubber 65 mils or thicker with a preformed, reinforced, L-shaped corner molded into the top edge to conform with the shape of the manhole structure. The top and lower edges shall have a 2 to 3-inch (51 mm to 76 mm) wide strip of non-hardening, butyl rubber sealant with a minimum thickness of 1/8-inch (3 mm) to seal the joints at the cone and the frame. Other types of chimney seals shall be approved by the Engineer.

ADD the following:

#### 502-5.6.3 Installation.

1. Remove existing manhole frame and cover and cone. Remove steps flush with the surface of the manhole. Clean all remaining surfaces and repair the manhole base to its original form in accordance with 502-3 and 502-4.
2. If necessary, neatly saw cut the polymer concrete insert to accommodate existing sewer pipe penetrations into the manhole. Circular cuts shall be used for pipe penetrations to minimize the amount of polymer concrete removed. Remove any surface irregularities along the perimeter edge of the shelf that will support the insert and apply cement mortar to receive the insert. Lower the first insert onto the mortar and shim the insert plumb and centered within the existing manhole. Trowel the mortar flush with the insert wall to fill any voids along the bottom edge of the insert.
3. After the bottom joint has hardened, apply epoxy mortar on the shelf in the annular space above the channel. Build up the surface of the shelf to at least 4 inches (100 mm) above the bottom of the lowest insert. Slope the manhole shelf uniformly toward the channel with 1

inch rise per foot of run. When completed, the shelf shall be free of cracks, sharp edges and unbonded epoxy mortar.

4. Install the remaining inserts and cone using wall alignment guides and joint sealant. Lift the inserts into place using spreader bars approved or furnished by the manufacturer.
5. Extend existing pipe penetrations with new pipe to the interior surface of the insert and patch all pipe entry areas with epoxy mortar. Install grade rings and frame and cover to finish surface. In unpaved areas where the grade rings will extend above the ground surface, bond the grade rings and frame with an epoxy adhesive approved by the manufacturer. Install the external chimney seal to seal the joint between the cone and lowest grade ring, and between the grade rings and the frame casting.
6. Backfill the annular space between the host structure and the insert with CLSM. Place and compact backfill to pavement subgrade, or to final ground surface in unpaved areas, per 306-12 and restore the pavement section in accordance with 306-13.

ADD the following:

[502-5.6.4 Acceptance and Warranty.](#)

- a. Interior surfaces of manhole insert shall be free of voids, cracks, joint offset, or other irregularities. Acceptance shall be based on certification from the manufacturer that polymer concrete structural insert system components meet the requirements of the referenced standards and on the quality of the finished product upon inspection by the Agency. Manufacturer shall provide a 50-year corrosion warranty on the structural inserts.



## PART 6 TEMPORARY TRAFFIC CONTROL

### SECTION 600 – ACCESS

#### 600-3 PEDESTRIAN ACCESS.

ADD the following:

##### 600-3.1 ADA Requirements.

1. Temporary facilities shall be detectable by a person with a visual disability traveling with the aid of a long cane and include accessibility features consistent with the features present in the existing pedestrian facility. A detectable barrier shall be placed across the full width of the closed sidewalk.
2. Channelized pedestrian routes shall be clear of obstacles and shall have a continuous detectable edging. The accessible route shall have the following:
  - a. Clear headroom of at least 80 inches (2032 mm).
  - b. A surface that is firm, stable, and slip resistant.
  - c. No level changes in excess of 1/2 inch (12.5 mm) vertically (in the absence of a curb ramp, ramp, elevator, or platform lift).
  - d. A curb ramp slope of less than 8.3% (1:12).
  - e. A path of travel slope of less than 5% (1:20) and a cross slope of less than 2% (1:50).
  - f. Routes that are under scaffolding conforming to ADA requirements.
  - g. Audible information devices (when shown on Plans or Traffic Control Permit).

## PART 7 STREET LIGHTING AND TRAFFIC SIGNALS

Modify as follows: **Division X Electrical Work, Section 86 General and Section 87 Electrical Systems** of the Caltrans Standard Specifications replaces Section 700, "Street Lighting and Traffic Signals," of the SSPWC, in all matters pertaining to the specifications for measurement, payment, warranty, materials and methods of construction of street lighting and traffic signals. Section 86 of the Caltrans Standard Specifications is unmodified excepted as specified herein.

### **GENERAL**

#### **Summary**

All traffic signal improvements constructed within the City of Carlsbad shall conform to the requirements as contained herein. Traffic signal equipment and improvements not otherwise identified within this document shall be in accordance with the latest version of the Caltrans Standard Plans, Caltrans Revised Standard Plans (RSP), Standard Specifications, and Revised Standard Specifications.

All references to the Caltrans Standard Plans in this specification refer to the 2018 Caltrans Standard Plans and Revised Standard Plans (RSP) as posted through October 18, 2019.

All numerical references in the left column of this document refer to the applicable section of the 2018 Caltrans Standard Specifications. All numerical references with two letters in the suffix are fictitious sections which are not included in the Caltrans Standard Specifications. All section titles follow the information pertinent to the City of Carlsbad.

#### **Submittals**

The Contractor shall submit all proposed equipment and materials to the City of Carlsbad for review and approval prior to ordering. Submitted materials shall conform to the requirements of the Caltrans specifications, these specifications, the plans, and special provisions. Proposed use and submittal of equipment different than equipment where the vendor and/or model has been specifically identified shall conform to all features and functions of the specified equipment. Where applicable the proposed equipment shall demonstrate support of full functionality within existing City of Carlsbad operational software.

#### **Requirements**

The Contractor shall obtain the appropriate permits and shall conduct a field walk through of the project site with City of Carlsbad prior to the start of work.

The Contractor shall contact the City of Carlsbad to schedule the field walk a minimum of 14 days in advance.

The Contractor shall be responsible to coordinate with the City of Carlsbad for project approval and acceptance.

## **Warranty Requirements**

The Contractor shall warranty all work, labor, equipment, cabling, and appurtenances from defects, malfunctions, and failures for a minimum of one year from the date of acceptance by the City of Carlsbad Traffic Engineer and/or TSOS. This warranty shall include all labor, materials, equipment, shipping, handling, and miscellaneous work necessary to remedy defects, malfunctions, and failures to the satisfaction of the City.

## **Testing Requirements**

The Contractor shall be responsible for testing of all installed traffic signal system equipment and components; including, but not limited to, fiber optic cables, traffic signal controller, input/output cards, and cabling, to ensure a fully functional system. The Contractor shall prepare a test plan for review and approval by the City prior to conducting the test.

## **TRAFFIC SIGNAL SYSTEM IMPROVEMENTS**

The Contractor shall be responsible to furnish and install all traffic signal equipment and materials except for those items specifically identified on the project plans and special provisions to be furnished by the City of Carlsbad. The Contractor shall provide all traffic control, configuration, and testing necessary to install or modify the traffic signalized intersection as identified in the project plans and special provisions.

## **STREET LIGHTING AND TRAFFIC SIGNAL SYSTEMS**

### **86-1.02B Conduits.**

#### **General.**

1. Underground conduit shall be Schedule 80 PVC conduit complying with UL 651.
2. Galvanized rigid steel conduit shall be utilized in all exposed above ground installations; within structures; and, between a structure or exposed location and the nearest pull box.
3. Conduit sweeps shall be factory manufactured bends with a maximum angle of 30-degrees; radius of bends shall be a minimum of ten times the outside diameter of the nominal conduit cross-section.
4. All conduit shall have a #12 tracer wire and a pull rope installed. The #12 tracer wire and pull rope shall be separate materials (not combined into a single detectable pull rope).
5. All service conduits between San Diego Gas and Electric (SDG&E) service points and meter pedestals shall comply with SDG&E conduit size and material requirements.
6. All conduits shall be a minimum three-inch conduit unless otherwise identified on the plans.
7. Construction of all new traffic signals or modification requiring installation of new conduit to an existing traffic signal shall have a minimum of one 3" conduit crossing each leg of the intersection. Additionally, all new or modified traffic signals shall have a spare 3" conduit crossing the major street directly adjacent to the traffic signal cabinet. Each conduit crossing shall terminate into a traffic signal pull box.

### **86-1.02C Pull Boxes and Vaults.**

1. All new pull boxes for traffic signal systems shall be No. 6, unless otherwise identified on the project plans or special provisions. The traffic signal pull box adjacent to the traffic signal

controller cabinet shall be No. 6E. Pull box covers shall be marked "CARLSBAD TRAFFIC SIGNAL".

2. All new lighting pull boxes shall be a No. 3.5 pull box, unless otherwise identified on the project plans or special provisions. The lighting pull boxes shall be marked "CARLSBAD LIGHTING."
3. All pull boxes shall be concrete.
4. Covers for No. 3.5 and No. 5 pull boxes installed in non-traffic areas shall be concrete. Covers for No. 6 pull boxes installed in non-traffic areas shall be concrete or polymer.
5. All new fiber optic pull boxes, at locations along or at the intersection of a major/collector arterial, shall be a 36"x36"x36" splice vault unless otherwise identified on the project plans or special provisions. The splice vault lid shall be lockable and have a lift assist. The splice vault shall be furnished with racks and hooks installed in the walls of the vault. For fiber optic pull box locations along or at the intersection of a local street or in areas where space is confined, a No. 6E pull box shall be used at the discretion of the City of Carlsbad. Splice vault and pull box covers shall be marked "CARLSBAD FIBER OPTIC."

**87-19.02D Fiber Optic Splice Enclosure.**

**General.**

1. Each splice shall be individually mounted and mechanically protected in the splice tray and shall be protected with heat-shrink splice protector sleeves.

**86-1.02F Conductors, Cabling, and Wiring.**

**86-1.02F(1) Copper Conductors and Traffic Signal Cabling.**

1. Conductors and cabling for traffic signal systems, lighting, and miscellaneous electrical connections shall be in accordance with the Caltrans Standard Specifications.

**86-1.02F(3)(d)(vi) Communication Cabling.**

1. The Contractor shall furnish Category 6 communications cabling has identified on the project plans. The furnished CAT 6 cabling shall be shielded, conforming to the requirements of Telecommunications Industry Association (TIA) Standard 568 C.2.
2. CAT 6 cables must not exceed 300 feet in finished length. Check each cable for pin-to-pin termination of each conductor.
3. The finished outside diameter of the cable must not exceed 1/2-inch.

**87-19.02C Fiber Optic Cabling.**

1. Each fiber optic (FO) outside plant cable must be all dielectric, non-gel water blocking materials, duct type, with loose buffer tubes and must conform to the special provisions. Cables must contain single mode (SM) (1310 nm and 1550 nm) fibers in the quantities as shown on the plans; if not shown on the plans the following fiber counts will apply:

Quantity	Cable	Purpose
12	SMFO	Branch Cable



2. The optical fibers must be contained within loose buffer tubes. The loose buffer tubes must be stranded around an all dielectric central member. Aramid yarn or fiberglass must be used as a primary strength member, and a polyethylene outside jacket must provide for overall protection.
3. All FO cable must be from a manufacturer who is regularly engaged in the production of this material.
4. Each optical fiber must be glass and consist of a doped silica core surrounded by concentric silica cladding. All fibers in the buffer tube must be usable fibers and must be sufficiently free of surface imperfections and inclusions to meet the optical, mechanical, and environmental requirements of these specifications. The required fiber grade SM must reflect the maximum individual fiber attenuation, to guarantee the required performance of each fiber in the cable.
5. The coating must be a dual layered, UV cured acrylate. The coating must be mechanically or chemically strippable without damaging the fiber.
6. The cable must comply with the optical and mechanical requirements over an operating temperature range from -40 to +70 °C. The change in attenuation at extreme operational temperatures (from -40 to +70 °C) for single mode fiber must not be greater than 0.20 dB/km, with 80 percent of the measured values no greater than 0.10 dB/km. The single mode fiber measurement is made at 1550 nm.
7. For all fibers the attenuation specification must be a maximum attenuation for each fiber over the entire operating temperature range of the cable.
8. Single mode fibers within the finished cable must meet the requirements in the following table:

Parameter	Singlemode
Type	Step Index
Core diameter	8.3 μm (nominal)
Cladding diameter	125 μm ±1.0 μm
Core to Cladding Offset	≤1.0μm
Coating Diameter	250 μm ±15 μm
Cladding Non-circularity defined as: [1-(Min cladding Dia ÷Max cladding Dia.)]x100	≤2.0 <u>percent</u>
Proof/Tensile Test	
Attenuation: (-40 to +70 °C) @1310 nm @1550 nm	≤0.4 dB/km ≤0.3 dB/km
Attenuation at the Water Peak	≤2.1 dB/km @ 1383 ±3 nm
Chromatic Dispersion: Zero Dispersion Wavelength Zero Dispersion Slope	1301.5 to 1321.5 nm ≤0.092 ps/(nm <sup>2</sup> *km)
Maximum Dispersion:	≤3.3 ps/(nm*km) for 1285 – 1330 nm <18 ps/(nm*km) for 1550 nm
Cut-Off Wavelength	<1260 nm

Parameter	Singlemode
Mode Field Diameter (Petermann II)	9.3 ±0.5 μm at 1300 nm 10.5 ±1.0 μm at 1550 nm

9. Optical fibers must be distinguishable from others in the same buffer tube by means of color coding according to the following:

1. Blue (BL)	7. Red (RD)
2. Orange (OR)	8. Black (BK)
3. Green (GR)	9. Yellow (YL)
4. Brown (BR)	10. Violet (VL)
5. Slate (SL)	11. Rose (RS)
6. White (WT)	12. Aqua (AQ)

10. The colors must be targeted in accordance with the Munsell color shades and must meet EIA/TIA-598 "Color Coding of Fiber Optic Cables".

11. Buffer tubes containing fibers must also be color coded with distinct and recognizable colors according to the same table listed above for fibers.

12. The color formulation must be compatible with the fiber coating and the buffer tube filling compound, and be heat stable. It must not fade or smear or be susceptible to migration and it must not affect the transmission characteristics of the optical fibers and must not cause fibers to stick together.

13. The fiber optic cable must consist of, but not be limited to, the following components:

- A. Buffer tubes
- B. Central member
- C. Filler rods
- D. Stranding
- E. Core and cable flooding
- F. Tensile strength member
- G. Ripcord
- H. Outer jacket

14. Buffer Tubes. - Loose buffer tubes must provide clearance between the fibers and the inside of the tube to allow for expansion without constraining the fiber. The fibers must be loose or suspended within the tubes and must not adhere to the inside of the tube. Each buffer tube must contain 6 or 12 fibers.

15. The loose buffer tubes must be extruded from a material having a coefficient of friction sufficiently low to allow free movement of the fibers. The material must be tough and abrasion resistant to provide mechanical and environmental protection of the fibers, yet designed to permit safe intentional "scoring" and breakout, without damaging or degrading the internal fibers.

16. Buffer tube must have a non-gel water-blocking material used to prevent water intrusion and migration. The filling compound must be non-toxic and dermatologically safe to exposed skin. It must be chemically and mechanically compatible with all cable components, non-nutritive

to fungus, non-hygroscopic and electrically non-conductive. The filling compound must be free from dirt and foreign matter and must be readily removable with conventional nontoxic solvents.

17. Buffer tubes must be stranded around a central member by a method that will prevent stress on the fibers when the cable jacket is placed under strain, such as the reverse oscillation stranding process.
18. Central Member. - The central member which functions as an anti-buckling element must be a glass reinforced plastic rod with similar expansion and contraction characteristics as the optical fibers and buffer tubes. A linear overcoat of low-density polyethylene must be applied to the central member to achieve the optimum diameter to provide the proper spacing between buffer tubes during stranding.
19. Filler Rods. - Filler rods may be included in the cable to lend symmetry to the cable cross-section where needed. Filler rods must be solid medium or high-density polyethylene. The diameter of filler rods must be the same as the outer diameter of the buffer tubes.
20. Stranding. - Completed buffer tubes must be stranded around the overcoated central member using stranding methods, lay lengths and positioning such that the cable must meet mechanical, environmental and performance specifications. A polyester binding must be applied over the stranded buffer tubes to hold them in place. Binders must be applied using tension sufficient to secure the buffer tubes to the central member without crushing the buffer tubes. The binders must be non-hygroscopic, non-wicking (or rendered so by the flooding compound), and dielectric with low shrinkage.
21. Core and Cable Flooding. - The cable core interstices must be filled with a polyolefin-based compound to prevent water ingress and migration. The flooding compound must be homogeneous, non-hygroscopic, electrically non-conductive, and non-nutritive to fungus. The compound must also be nontoxic, dermatologically safe and compatible with all other cable components.
22. Tensile Strength Member. - Tensile strength must be provided by high tensile strength aramid yarns or fiberglass which must be helically stranded evenly around the cable core and must not adhere to other cable components.
23. Ripcord. - The cable must contain at least one ripcord under the jacket for easy sheath removal.
24. Outer Jacket. - The jacket must be free of holes, splits, and blisters and must be medium or high-density polyethylene (PE), or medium density cross-linked polyethylene with minimum nominal jacket thickness of  $40.0 \pm 3$  mil  $1000 \pm 76$   $\mu\text{m}$ . Jacketing material must be applied directly over the tensile strength members and flooding compound and must not adhere to the aramid strength material. The polyethylene must contain carbon black to provide ultraviolet light protection and must not promote the growth of fungus.
25. The jacket or sheath must have clear, distinctive and permanent markings showing the manufacturer's name, the words "Optical Cable", the number of fibers, "SM", year of manufacture, and sequential measurement markings every 3 feet. The actual length of the cable must be within  $-/+1$  percent of the length marking. The marking must be in a contrasting color to the cable jacket. The height of the marking must be approximately 0.1-inch.
26. The FO cable must meet the current requirements of the Energy Information Administration (EIA) and TIA fiber optic test procedures; EIA-TIA 455-x.

27. The completed cable must be packaged for shipment on reels. The cable must be wrapped in a weather and temperature resistant covering and sealed to prevent the ingress of moisture. Each end of the cable must be securely fastened to the reel to prevent the cable from coming loose during transit. Ten feet of cable length on each end of the cable must be accessible for testing.
28. Each cable reel must have a durable weatherproof label or tag showing the manufacturer's name, the cable type, the actual length of cable on the reel, your name, the contract number, and the reel number. A shipping record must also be included in a weatherproof envelope showing the above information and also include the date of manufacture, cable characteristics (size, attenuation, bandwidth, etc.), factory test results, and cable identification number.
29. The FO cable must be in one continuous length per reel with no factory splices in the fiber. Each reel must be marked to indicate the direction the reel should be rolled to prevent loosening of the cable.

#### **86-1.02F Vehicle Detection.**

1. Vehicle detection shall be fully functional for detecting vehicles and bicycles, where applicable, and shall terminate into a two-channel or four-channel detector card in the controller cabinet. Vehicle detection shall be comprised of two categories: presence and advance.
2. Presence detection shall be capable of vehicle presence, passage, count, and occupancy.
3. Inductive loops for use as presence or advance detection as identified on the project plans, shall conform to Section 86-1.02F(c)(iii) of the Caltrans Standard Specifications.
4. Over-roadway detection technologies are detection solutions that provide the capability to perform presence and/or advance detection without requiring the need of installing the detection onto, inside, or beneath the roadway. Over-roadway detection equipment furnished for the purpose of presence or advance detection shall include all mounting hardware, cabling, and input cards as required by the equipment manufacturer.

#### **86-1.02F(3)(d)(iii) Loop Lead-ins.**

1. Conductors for loop detector lead-ins shall be Type B.

#### **86-1.02K Roadway Street Lighting**

1. **Mission Bell Luminaires.** The contractor shall be responsible for furnishing and installing all components of the Mission Bell fixture and light standard in accordance with manufacturer's specifications and these special provisions. The Contractor's responsibility shall include, but is not limited to, mounting adaptor to mast arm, mounting bracket for use with photoelectric control and suspension method for conductors. Mission Bell Luminaire shall be King Luminaire Mission Bell Type III or equal as show on the project plans. The Contractor shall submit shop drawings for the mounting design for approval by the Engineer prior to fabrication in accordance with Section 2-5.3 Shop Drawings.
2. **Concrete Street Light Pole.** Streetlight pole shall be Ameron Contemporary Series 2B2 Round Pole or approved equivalent with the following parameters:



- a. Streetlight poles shall be round, pre-stressed concrete utilizing an anchor base. The surface treatment shall be exposed concrete aggregate with a graffiti-resistant coating.
  - b. Streetlight foundations shall be in accordance with San Diego Regional Standard Drawing (SDRSD) E-1 and E-2 for standard concrete poles with no additional mounted appurtenances.
  - c. Streetlight poles in arterial or commercial areas shall have a height of 26 feet.
  - d. Mast arms shall be aluminum or galvanized steel with a length of 8 feet.
  - e. Luminaire mounting height shall be between 1.5' and 2.5' from the top of pole.
3. **Photoelectric Control.** Each safety lighting luminaire shall be furnished and installed with a photocell compatible to the NEMA 7 pin socket as identified in the City of Carlsbad Lighting Specifications.

### **86-1.02AB Communication Equipment.**

#### **General.**

1. All Communication Equipment shall be compatible with the existing City of Carlsbad communications network, traffic signal controller, locally installed equipment, and central traffic signal software system. The equipment type shall comply with the type shown on the plans unless directed otherwise by the City of Carlsbad Traffic Engineer and/or TSOS.
2. All communication equipment shall be Ethernet, field hardened devices, manufactured by a company regularly engaged in the production of Ethernet communications devices.
3. For the purposes of equipment sizing, intersections shall be defined as small, medium, or large.
  - a. Small: Any intersection with five (5) or fewer networked sensors/controllers/IoT devices, and which does not have any downstream intersections to support.
  - b. Medium: Any intersection with five (5) to ten (10) networked sensors/controllers/IoT devices, and which has one (1) to three (3) downstream intersections to support.
  - c. Large: Any intersection with ten (10) or more networked sensors/controllers/IoT devices, and which has one (1) or more downstream intersections to support.

#### **Ethernet Switch (Copper).**

1. Ethernet switches supporting communications over copper media shall be Cisco Industrial Ethernet (IE) 4000 as approved by the City of Carlsbad or approved equal in all features and functions. Ethernet Switch (Copper) shall be a hardened, managed, Layer 3 switch complying to NEMA TS2 requirements. All ethernet switches shall be at a minimum 10/100/1000BASE-X and have a minimum of eight total Gigabit Ethernet (GE) ports. At least four shall be combination ports (capable of fiber or copper mediums) and the remaining number and configuration shall be per the direction of the City of Carlsbad.

#### **Ethernet Switch (Fiber).**

1. Ethernet switches supporting communications over fiber optic cabling shall be be Cisco Industrial Ethernet (IE) 4000 as approved by the City of Carlsbad or approved equal in all features and functions.
2. Ethernet Switch (Fiber) shall be a hardened, managed, Layer 3 switch complying to NEMA TS2 requirements. All ethernet switches shall be at a minimum 10/100/1000BASE-X and have a

minimum of twelve total Gigabit Ethernet (GE) ports. Eight ports shall be 10/100/1000BASE-TX PoE ports, two 10/100/1000BASE-FX ports (single mode) with SC connections, and two 10/100/1000BASE-SX (SFP) (single mode) with SC connections for communications per the direction of the City of Carlsbad.

#### **86-1.02AC Fiber Optic Termination Unit.**

1. The Contractor shall furnish and install a 19-inch rack mountable fiber optic termination unit capable of terminating a minimum of 24 fiber strands or the number of fiber strands as identified in the project plans. The rack mountable termination unit shall house, organize, manage, and protect fiber optic cable, splices, and connectors; and shall include integral cable management.
2. The Fiber Optic Termination Unit fiber trays shall be constructed of steel material. Steel cover shall be removable for cabling and connector access during installation. Enclosure shall have multiple knockouts for a variety of cable entry points. Termination connector type shall be SC/UPC connectors.

### **CONSTRUCTION**

#### **87-1.03B(3)(a) Conduits.**

##### **General.**

1. Conduit installation shall be by trenching or directional drilling method as identified in the plans or specified herein. Conduit installation under existing pavement, sidewalk, driveways, and pedestrian ramps shall be by directional drilling unless previously approved by the City of Carlsbad Traffic Engineer.
2. The Contractor shall not be allowed to dig under existing curb and gutter for conduit installation. All curb and gutter removed shall be restored within 48 hours of demolition.
3. Conduit with less than 30 inches of covers shall be concrete encased with a minimum of 18 inches of cover. Fiber optic conduit installed by trenching shall be marked with a yellow underground warning tape installed 6 inches below grade. The installed yellow underground marking tape must be marked to identify "CAUTION FIBER OPTIC".

##### **Payment.**

1. Conduit shall be measured and paid per lineal foot for each size and type of conduit furnished and installed.

#### **87-1.03C Pull Boxes and Vaults.**

##### **General.**

1. The Contractor shall stake the proposed location of the pull boxes after verification of underground utilities and obtain approval of the location by the Engineer prior to construction.
2. All pull boxes shall be placed behind the sidewalk, or if the preceding is impractical, in the sidewalk adjacent to the right-of-way.

3. Any pull boxes installed along a roadway without curb and sidewalk shall be installed adjacent to, but not within, the shoulder. All pull boxes adjacent to the shoulder, or other drivable areas, shall be traffic rated.
4. Fiber optic communication pull boxes shall have a maximum spacing of 1,000 feet with no more than 180 degrees of total bends, or as approved by the City.

**Payment.**

1. Pull Boxes will be measured and paid for each type of Pull Box or Splice Vault installed in accordance with the project plans.

**87-19.02D Fiber Optic Splice Enclosure.**

**Splices.**

1. Fiber Optic Splice Enclosure shall be installed within a splice vault or No. 6E pull box and mounted horizontally in a manner that allows the cables to enter at the end of the splice enclosure. Not less than 50 feet of each cable entering the splice enclosure shall be coiled in vault or pull box to allow the fiber splice closure to be removed for future splicing.

**Payment.**

1. Fiber Optic Splice Enclosure shall be measured and paid per each unit furnished and installed in accordance with the project plans.

**87-1.03F Traffic Signal Safety Lighting.**

1. Installation of traffic signal safety lighting luminaires shall be in accordance with the Caltrans Standard Plans.

**Payment.**

1. Traffic Signal Safety Lighting will be measured and paid for each luminaire furnished and installed in accordance with the project plans.

**87-2.03 Conductors, Cabling, and Wiring.**

**87-18.01 General.**

1. All cabling in pull boxes and cabinets shall be labeled.
2. The phasing for all traffic and pedestrian signal cabling shall be labeled per the associated plans.

**87-19.01 Fiber Optic Cabling.**

1. FO Cabling in conduit shall have twelve (12) strands at intersections where fiber optics is utilized. FO Cabling between intersections shall be connected in a linear series. Eight (8) strands shall be utilized by the City of Carlsbad Traffic Division and four (4) strands shall be utilized by the City of Carlsbad Information Technology Department.
2. Installation of FO cabling shall conform to the cable manufacturers procedures for tensioning and bend radius. Fiber optic cabling shall be installed unspliced except for the splice locations specifically identified on the project plans.

3. Splicing of the fiber optic cable shall be fusion splices and shall be limited to only those fibers specifically identified to be spliced. Full cable splice for ease of installation shall not be permitted. A minimum of 10 feet of slack shall be provided in each pull box the fiber optic cable passes through. At splice vaults, with or without splices identified, a minimum of 50 feet of slack shall be provided.
4. Fiber optic cable splices must be housed with splice trays in a fiber termination panel or splice enclosure and must be protected with a metal reinforced thermal shrink sleeve.

**Payment.**

1. Conductors, Cabling, and Wiring for traffic signal installations and modifications will be measured and paid as a lump sum per traffic signal installation or modification.
2. Conductors, Cabling, and Wiring for communications, fiber optic, and street lighting systems will be measured and paid per lineal foot for each type of conductor or cable installed in accordance with the project plans.

**87-1.03F(2)(c)(ii) Vehicle Detection.**

**General.**

1. Installation of inductive loop detectors for presence or advance detection, as identified on the project plans, shall conform to Section 87-1.03F(3)(c)(ii) of the Caltrans Standard Specifications.
2. Over-roadway detection technology cabling shall run unspliced from the traffic signal controller cabinet to the equipment installed on poles and/or other supports over the roadway. Equipment and cabling installation shall be in accordance with manufacturer recommendations. Over-roadway detection shall input detection calls to the traffic signal controller via the traffic signal cabinet input assembly.

**Payment.**

1. Inductive loop detectors shall be measured and paid for each type of loop detector installed in accordance with the project plans.
2. Over-roadway detection equipment shall be measured and paid for each unit furnished and installed in accordance with the project plans. No separate measurement or payment will be made for cables, input cards, or other appurtenances required to provide the intended operation.

**87-1.03AA Communication Equipment.**

**General.**

1. The Contractor shall deliver all Ethernet Switches to be provided by the project to the City of Carlsbad Information Technology Department for configuration and bench testing prior to field installation.
2. The Contractor shall provide a minimum of 30 working days for the City staff to complete the configuration and testing of each Ethernet switch prior to field installation. Following configuration by City staff the Contractor shall pick-up, transport, and install the Ethernet switches in the traffic signal cabinet as identified on the project plans.



3. Following field installation, the City of Carlsbad shall perform communications network testing. The Contractor shall be onsite during communications network testing to assist with troubleshooting as directed by the City of Carlsbad.

**Payment.**

1. Communication Equipment will be measured and paid for each type of Ethernet Switch furnished and installed in accordance with the project plans.
1. Measurement for payment of Rectangular Rapid Flashing Beacon will be on a lump sum basis, complete, in place and operating as intended for each crossing.
2. The Contract lump sum prices paid for Rectangular Rapid Flashing Beacon shall be full compensation for picking up and furnishing all materials as shown on the plans, and for installing all materials including, but not limited to, installing poles, flashing beacons, pole-mounted signs, solar panels, batteries, pole-mounted cabinet and controller, and making all required tests and for all labor, tools, equipment and incidentals required to make the beacons operational as shown on the plans, as specified, and as required by the City of Carlsbad.

**87-1.03AD Fiber Optic Termination Unit.**

1. Fiber Optic Termination Unit shall be installed within the traffic signal controller cabinet.

**Payment.**

1. Fiber Optic Termination Unit shall be measured and paid per each unit furnished and installed in accordance with the project plans.

## PART 8 LANDSCAPING AND IRRIGATION

### SECTION 800 - MATERIALS

#### 800-1 LANDSCAPING MATERIALS.

##### 800-1.2.3 Commercial Fertilizer.

ADD the following:

Preplant fertilizer shall be granular commercial fertilizer 7-7-7 or approved equal. Postplant fertilizer shall be 12-4-6 or approved equal with Ca, Fe, Zn, and Mn and with the majority of nitrogen in nonammoniac form to prevent acidification of soil. Planting tablets shall be compressed fertilizer tablets with a 20-10-5 analysis. Hydroseed fertilizer shall be long-lasting, controlled-release, plastic-coated, uniform in composition, free-flowing, suitable for application with approved equipment, and shall contain the minimum available percentages of nitrogen, phosphoric acid, potash and sulfur required by tables 212-1.2.5.1(A) through 212-1-2-5-3(A).

##### 800-1.2.4 Organic Soil Amendment.

ADD the following:

For all types of Organic Soil Amendment mulch materials produced from pine trees grown in Alameda, Monterey, Santa Clara, Santa Cruz or San Mateo Counties shall not be used in the Work. Type 1A Organic Soil Amendment shall conform to the requirements for type 1 Organic Soil Amendment except as modified hereinafter. Type 1A Organic Soil Amendment shall be a wood or rice residual product derived from the bark of pine, white fir, or red fir or cedar or redwood shavings or rice hulls. Type 1A Organic Soil Amendment shall be manufactured from clean wood, free from clods coarse objects and rocks and shall conform to the properties shown in Table 212-1.2.4(B):

**Table 800-1.2.4(B)**  
**SOIL AMENDMENT PROPERTIES**

Property	Minimum	Maximum
Dry Weight Nitrogen	(1)	(1)
Dry Weight Passing 25 mm (1") Sieve	100%	100%
Dry Weight Passing #4 Sieve	95%	100%
Dry Weight Passing #16 Sieve	45%	65%
Dry Weight Passing #30 Sieve	30%	40%
Dry Weight Passing #50 Sieve	0%	10%
Dry Weight Passing #100 Sieve	0%	2%
Salinity	(1)	(1)
Iron ( Dilute acid soluble on dry weight basis)	0.08%	---
Ash (dry weight basis)	0%	6.0%
pH	6.0	7.0
Wettability	(1)	(1)

(1) (As Required by Table 212-1.2.4(A) SSPWC)

For all types of Organic Soil Amendment the Contractor shall supply the Engineer a sample of the proposed amendment accompanied by an analytical analysis from a qualified agricultural laboratory certifying compliance to the requirements herein. Qualified agricultural laboratories shall have an on-going quality assurance program that fulfills the requirements of the most recent version of the “Western States Laboratory Proficiency Testing Program Soil and Plant Analytical Methods”. Certificates of compliance shall contain a statement attesting that the organic soil amendment meets the requirements of these specifications and that the testing agricultural laboratory does fulfill the requirements of “Western States Laboratory Proficiency Testing Program Soil and Plant Analytical Methods”. Said submittal shall be in accordance with Section 2-5.3.3.

**800-1.2.5 Mulch for Hydraulic Method Seed Lawn Planting.**

Add the following:

The terms Hydroseeding and Hydroseed shall be synonymous with Hydraulic for the purposes of Section 800. Disturbed Areas, planting areas shall be mulched, fertilized and seeded using method B. Mulch shall be manufactured from virgin wood cellulose fiber mulch and shall not contain growth or germination inhibitors. When mixed with water, the mulch shall remain in uniform suspension and when blended with the seed, fertilizer, and other approved additives, shall form a homogeneous slurry. When applied, the fibers shall form a moisture absorbing membrane with adequate percolation properties sufficient to allow one hundred percent of water applied at the rate of 3.1 liters per minute per square meter (0.075 gallons per minute per square foot) onto a surface inclined at a 2:1 (horizontal: vertical) slope to pass through the membrane. A non-phyto-toxic wetting agent shall be added to the slurry mixture. A water soluble, non-toxic green dye shall be added in sufficient quantity to clearly delineate the planted areas. When required, binder shall be added to the slurry mixture and shall be “CPA 4000”, “AZTAC”, “Ecology Control”, “M-Binder”, or approved equal.

ADD the following:

**800-1.2.5.1 Disturbed Area Mulch Fertilizer and Additives.**

In addition to the seed mix shown in the table for Disturbed Areas the slurry mixture shall be applied at the rates shown in Table 800-1.2.5.1(A).

**Table 800-1.2.5.1(A)  
DISTURBED AREA MULCH FERTILIZER AND ADDITIVES**

Component	Application Rate	
	grams per sq. meter	(pounds per acre)
Virgin Wood Cellulose Fiber Mulch	225	(2000)
Binder (1)	7	(60)
Fertilizer (16-20-0) Ammonium Phosphate Sulfate, Plus 15% Soil Sulfur	35	(300)
Wetting Agent	Per Mfg.	Recommendation
Green Colorant	Per Mfg.	Recommendation

(1) Required to be incorporated only when applied between the months of Nov. through Feb.

ADD the following:

#### 800-1.2.6 Herbicides and Pesticides.

Shall be used in their appropriate applications with strict adherence to manufacturer's specifications and instructions. Postemergent herbicide for all areas shall be Glyphosate, N-(phosphonomethyl) glycine, in the form of its isopropylamine salt such as Roundup Pro, Diquat, Montar, or approved equal. Preemergent herbicide for shrubs and groundcover areas planted from flats shall be Treflan, Surflan, Eptan, or approved equal.

ADD the following:

#### 800-1.2.7 General Soil Conditioners.

Agricultural-grade gypsum shall be a calcium sulfate ( $\text{CaSO}_4 \cdot \text{H}_2\text{O}$ ) product - 94.3 percent. 90 percent shall pass a 50-mesh screen. Control of dust during application is mandatory.

Iron Sulfate shall be ferrous sulfate in pelletized or granular form containing not less than 20.0 percent iron expressed as metallic iron. Iron Sulfate pellets shall be of size and gradation such that 98 percent is retained on a 10-mesh screen.

ADD the following:

#### 800-1.2.8 Stabilizing Emulsion.

Stabilizing emulsion shall be a concentrated liquid chemical that forms a plastic film upon drying and allows water and air to penetrate. The film shall be nonflammable and shall have an effective life of at least one year. Stabilizing emulsion shall be nontoxic to plant and animal life and nonstaining to concrete or painted surfaces. In the cured state the stabilizing emulsion shall not be re-emulsifiable. The material shall be registered with, and licensed by the California, Department of Food and Agriculture, as an "auxiliary soil chemical". Stabilizing emulsion shall be miscible with water at time of mixing and application.

#### 800-1.3 Seed.

Add following:

The quantity of pure live seed supplied shall meet or exceed the quantity shown in the specified mixes. Seed shall not contain more than 0.5 percent weed seed by volume. Seed types shall be as specified on the plans and planting legends and shall be applied at the rates indicated.

All brand-name, patented seed must be received by Contractor in original manufacturer's bag. Seed shall be received by Contractor in separate containers specifying kind, quantity, purity, and germination. Contractor shall provide the Engineer with each seed bag label used in the Work.

ADD the following:

#### 800-1.3.1 Seed for Disturbed Areas.

Hydroseeding mix for Disturbed Areas shall consist of no less than the seed varieties shown in Table 800-1.3.1 (A).



**Table 800-1.3.1(A)**  
**SEED FOR DISTURBED AREAS**

Seed Variety	Application Rate	
	grams per sq. meter	(pounds per acre)
Rose Clover	2.5	20 <sup>(1)</sup>
Festuca Megalura, Zorro Fescue	2.5	20
Eschscholzia Californica	0.35	3
Achillea Millefolia	0.45	4
Alyssum (Carpet Of Snow)	0.35	3
Dimorpholeca	0.25	2

(1) Rose Clover shall be inoculated with a nitrogen fixing bacteria and be applied dry either by drilling or broadcasting immediately before hydraulic application of the remaining seed mix and mulch.

**800-1.4.1 General.**

Add the following:

Plants shall be the variety and size shown on the plans or in the special provisions and shall conform to the requirements of these specifications. Contractor shall notify the Engineer 48 hours before each plant delivery so that the Engineer can inspect the plants. The scientific and common names of plants herein specified shall conform to the approved names given in “A Checklist of Woody Ornamental Plants in California, Oregon and Washington” published by the University of California, Division of Agriculture Sciences, Publication 4091 (1979). Each group of plant materials delivered on site shall be labeled clearly as to species and variety. All patented plants (cultivars) required by the plant list shall be delivered with a proper plant patent attached. The Contractor shall obtain clearance from the County Agricultural Commissioner, as required by law, before planting plants delivered from outside the County in which they are to be planted. Evidence that clearance has been obtained shall be filed with the Engineer. All plants furnished by the Contractor shall be true to type or name as shown on the plans and shall be tagged identifying the plants by species or variety; however, determination of plant species or variety will be made by the Engineer and the Engineer’s decision shall be final. Plants shall be individually tagged or tagged in groups by species or variety. Carpobrotus cuttings need not be tagged. All plants shall comply with Federal and State laws requiring inspection for plant diseases and infestations. Inspection certificates required by law shall accompany each shipment of plants, and certificates shall be delivered to the Engineer.

Plants furnished by the Contractor shall be healthy, shapely, and well-rooted, and roots shall show no evidence of having been restricted or deformed at any time. Plants shall be well-grown, free from insect pests and disease, and shall be grown in nurseries which have been inspected by the State Department of Food and Agriculture and have complied with the regulations thereof.

The Engineer is the sole judge as to acceptability of each plant. Vigorous, healthy, well-proportioned plants are the intent of this specification. Plants which are even moderately “overgrown”, or are showing signs of decline or lack of vigor, are subject to rejection. The size of the plants will be as shown on the plans. Plants larger in size than specified may be used with the approval of the Engineer, but the use of larger plants will make no change in contract price. If the

use of larger plants is approved, soil amendments shall be increased proportionately. All plants not conforming to the requirements herein specified shall be considered defective and such plants, whether in place or not, shall be marked as rejected, and immediately removed from the site and replaced with new plants by the Contractor at the Contractor's expense. The Engineer reserves the right to change the species, variety, and/or sizes of plant material to be furnished, provided that the cost of such plant changes do not exceed the cost of plants in the original bid, and with the provision that the Contractor shall be notified in writing, at least 60 days before the planting operation has commenced.

No plant shall be transported to the planting area that is not thoroughly wet throughout the ball of earth surrounding the roots. Any plant that, in the opinion of the Engineer, has a damaged root ball or is dry or in a wilted condition when delivered to the planting area will not be accepted, and shall be replaced by the Contractor at the Contractor's expense. Each plant shall be handled and packed in the approved manner for that species or variety, and all necessary precautions shall be taken to ensure that the plants will arrive at the site of the work in proper condition for successful growth. Trucks used for transporting plants shall be equipped with covers to protect plants from windburn.

Root condition of plants furnished by the Contractor in containers will be determined by removal of earth from the roots of not less than 2 plants nor more than 2 percent of the total number of plants of each species or variety, except when container-grown plants are from several sources, the roots of not less than 2 plants of each species or variety from each source will be inspected by the Engineer. In case the sample plants inspected are found to be defective, the Agency reserves the right to reject the entire lot or lots of plants represented by the defective samples. Any plants rendered unsuitable for planting because of this inspection will be considered as samples and will not be paid for.

The Contractor shall notify the Engineer when plants are to be shipped to the project site. The notification shall be given not less than 10 days prior to the actual shipment date.

Carpobrotus cuttings shall be 250 mm (10") or more in length and shall not be rooted. Delosperma cuttings shall be 150 mm (6") or more in length and shall not be rooted. Cuttings shall be tip cuttings from healthy, vigorous and strong-growing plants and shall be insect and disease free. Mature or brown-colored stem growths or cuttings which have been trimmed will not be accepted. Cuttings shall be planted not more than 2 days after cutting and shall not be allowed to dry or wither.

Carpobrotus cuttings shall not be taken from any plants that indicate the presence of ice plant scale (Pulvinaria species).

The Contractor shall notify the Engineer of the location where cuttings are to be taken at least 10 days prior to taking the cuttings and shall be responsible for all permit and inspection fees involved in obtaining cuttings.

### 800-1.5.3 Tree Stakes.

Modify as follows:

Tree stakes shall be 50mm (2") diameter turned lodgepole pine, pointed on their driven end.

ADD the following:

### 800-1.6 Erosion Control Matting.

Erosion control matting shall be made of 100-percent-biodegradable, weed-free wheat straw of thickness and density yielding 270 grams per square meter (0.50 lb./sy) with photodegradable polypropylene netting with a density of 0.89 grams per square meter (1.64 lb/1000 sy) having an approximate mesh interval of 50 mm x 50 mm (2" x 2") on each face of the straw mat. The straw mat shall be sewn together with unidirectional lines of cotton or polypropylene thread spaced approximately 50 mm (2") apart. Erosion control matting shall be "North American Green, DS150", "BonTerra S2", or approved equal.

ADD the following:

### 800-1.7 Erosion Control Mat Staples.

Erosion control mat staples shall be 25 mm x 150 mm (1" x 6"), U-shaped 11-gauge mild steel staples.

ADD the following:

### 800-1.8 Root Barriers.

Root barriers shall be no less than 1m (39") in width. Root barriers shall be "Biobarrier", as manufactured by Reemay, Inc., 70 Old Hickory Boulevard, Old Hickory, TN 97138, Phone 615-847-7000, no substitutes will be accepted.

## 800-2 IRRIGATION SYSTEM MATERIALS.

### 800-2.1.3 Plastic Pipe for Use with Solvent Weld Socket or Threaded Fittings.

ADD the following:

Except as provided in this section, all buried piping in the irrigation system shall be installed with underground utility marking tape conforming to the requirements of section 207-21 and identifying it as reclaimed water. Intermittent pressure lines (lines on the downstream side of a controller valve that will not be subject to constant pressure) will not require underground utility marking tape. All PVC pipe used for irrigation systems shall be colored purple by the addition of a dye integral to the PVC. Painted pipe will not be accepted. Pressure mainline piping for sizes 50 mm (2") and larger shall be PVC having a pressure rating of 2170 kPa (315 PSI), S.D.R. 13.5. Stenciled pipe is required for all irrigation system piping including portions not required to be marked with underground utility marking tape. All pipe shall have stenciling appearing on both sides of the pipe with the marking "Reclaimed Water" in 16 mm ( $\frac{5}{8}$ ") high letters repeated every 300 mm (12"). PVC non-pressure buried lateral line piping shall be PVC Schedule 40.

ADD the following:

### 800-2.1.7 Brass Pipe and Fittings.

Brass pipe shall be IPS standard weight 125 LB 85 percent copper and 15 percent zinc, trade designation seamless red brass pipe conforming to the requirements of ASTM B43-91. Brass pipe fittings and connections shall be Standard 125 LB class 85 percent red brass fittings and connections.

#### 800-2.2.7 Valve Boxes.

Add the following:

All valve boxes shall be marked "RCV", "BV" or "QC", "PB" respectively. Remote control valves shall be marked with station numbers embossed on the valve cover with a brass tag. (RCV boxes shall have locking covers.) Other boxes such as pull boxes, etc., shall be marked with appropriate identification.

ADD the following:

#### 800-2.2.8 Ball Valves.

Ball valves shall have bottom-loaded pressure-retaining stems, glass-reinforced seats, and reinforced TFE stem packing seals. Valves sizes 13 mm (½") to 50 mm (2") shall be pressure rated at 4140 kPa (600 PSI) WOG and 1030 kPa (150-PSI) saturated steam. Each valve shall be tested, air under water, in the opened and closed position by the manufacturer. Ball valve must conform to Federal Specification WW-V-35B, Type II, Class A, Style 3, End Connection A or C.

ADD the following:

#### 800-2.2.9 Pressure Regulator Valve.

Pressure regulator valve shall be bronze body with screw fitting.

ADD the following:

#### 800-2.2.9 Wye Strainers.

Wye strainers shall have a cast iron or all-bronze body with a removable stainless steel or monel strainer. Wye strainers shall be capable of withstanding a cold water working pressure of 1034 kPa (150 psi). Wye strainers at backflow preventer assemblies shall be equipped with a gate valve at the outlet. All other wye strainers shall be equipped with a garden valve at the outlet.

The strainer screen for the wye strainer in a backflow preventer assembly shall have an open area equal to at least 3 times the cross-sectional area of the pipe based on an iron pipe size and shall be woven wire fabric with 850-µm mesh or perforated sheet with 1.14 mm (0.045") diameter holes.

All other wye strainers shall be equipped with 425-µm strainer screens.

#### 800-2.3 Backflow Preventer Assembly.

Add the following:

Backflow preventers shall be one of the approved reduced pressure principle devices listed by the California Department of Health Services, Division of Drinking Water and Environmental Management, 601 North 7th Street, Mailing Station (MS) 92, P.O. Box 942732, Sacramento, CA 94234-7320.



Backflow preventers shall be factory assembled and shall include 2 check valves, one pressure differential relief valve, 2 shut-off valves and 4 test cocks. Backflow preventer and valves shall be the same size as the pipeline in which they are installed, unless otherwise shown on the plans. Backflow preventer shut-off valves shall be manufactured from iron or bronze and shall be either resilient wedged gate valves, resilient seated and fully ported ball valves, or resilient seated butterfly valves. Threaded type shut-off valves shall be provided with a union on one side of each valve. Unions shall be brass or malleable iron.

#### 800-2.4 Sprinkler Equipment.

Add the following:

All sprinkler heads are to have factory built-in check valves or a check valve under each head. Drip assemblies shall meet the following requirements: The drip emitter shall be Pepco Quadra or Rainbird XERI-Bird-8 or approved equal as called on drawings, with four ports. Drip tubing for emitter outlets shall be Rainbird (RBT-160V), Salco, or approved equal. Drip tubing stakes shall be Rainbird No. RS-13, Salco, or approved equal. Bug cap for drip tubing shall be manufactured by Rainbird, Pepco, or approved equal. The drip pressure regulator shall be Rainbird, Netafim PVR, or approved equal. Drip emitter filter shall be Amiad, Rainbird, or approved equal. Drip emitter access boxes shall be Rainbird No. SEB-6X, Salco Subterranean Emitter Box, or approved equal. Check valves shall be of heavy-duty virgin PVC construction with FIP thread inlet and outlet. Internal parts shall be stainless steel and neoprene. Antidrain valves shall be field adjustable against drain out from 1.5 m to 12 m (5' to 40') of head. All sprinkler heads that are without valves in the heads are to have an antidrain valve feature and shall have an excess flow feature, which will automatically stop the flow of water when it exceeds the GPM preset by the manufacturer. Check valves shall be King Bros., Rainbird, or approved equal.

ADD the following:

##### 800-2.4.1 Additional Equipment.

Contractor shall provide the following items to the Engineer:

1. Two control valve keys.
2. Two wrenches for removing each different type of sprinkler head.
3. Two quick coupler keys. The keys and hose ells shall be of the same manufacturer as the coupling valve.
4. Five keys for opening and locking each automatic controller and enclosure.

ADD the following:

##### 800-2.5 Flexible Hose.

Flexible hose shall be nonrigid polyvinyl chloride (nonrigid PVC) hose conforming to the specifications of ASTM Designation: D 2287, Cell-type 6464500.

Wall thicknesses of nonrigid PVC hose shall conform to Table 800-2.5(A) when determined in accordance with ASTM Designation: D 2122.

**TABLE 800-2.5(A)  
FLEXIBLE HOSE**

Hose Size-Nominal		Minimum Wall Thickness*		Range
(Millimeters)	(Inches)	(Millimeters)	(Inches)	(Percent)
15	5/8	3.73	0.147	12
20	3/4	3.91	0.154	12
25	1	4.55	0.179	12

\*as measured at any point on the cross section.

The hose shall provide leak-free, non-separating connections suitable for the purpose intended when connected to the fittings specified herein. Fittings for flexible hose shall be injection molded PVC, Schedule 40, conforming to the specifications of ASTM Designation: D 2466. Fittings shall be solvent cemented type. Solvent cement for flexible hose and fittings shall be of commercial quality specifically manufactured for use with nonrigid PVC hose. Primer for flexible hose fittings shall be the same as specified for plastic pipe supply line fittings.

### 800-3 ELECTRICAL MATERIALS.

#### 800-3.1 General.

ADD the following:

All electrical materials shall conform to the requirements of the 1996 National Electrical Code.

#### 800-3.2.2 Conductors.

ADD the following:

Low voltage electric wiring running from controller to the automatic control valves shall be no smaller than No. 14 solid single conductor, copper wire, 0.015 mm (60 mil) insulation, 0.015 mm (60 mil) neoprene jacket, style UF (Direct Burial), or equal, color code wires to each valve. Neutral wires shall be white, no smaller than No. 12 solid single conductor wire, 0.015 mm (60 mil) insulation, 0.015 mm (60 mil) neoprene jacket, style UF (Direct Burial).

#### 800-3.3 Controller Unit.

Add the following:

All controllers shall be grounded by one 19 mm (5/8") diameter by 3 m (10') long stainless steel grounding rod and a 50-ohm resistance lightning arrester.

ADD the following:

**800-3.4 Irrigation Electrical Service Equipment and Enclosures.** Electrical service equipment shall incorporate the following elements:

1. One 100-amp, 120/240-volt, single-phase load center, as approved by the Engineer;
2. One 100-amp rated commercial meter socket suitable for the San Diego Gas and Electric Company meter, with provision for test block bypass having a UL listing and EUSERC approval;
3. One 15-amp circuit breaker for each irrigation controller energized by the service;
4. One 20-amp circuit breaker for the duplex receptacle.

5. The design, assembly, grounding, wiring, and components of the irrigation electrical service equipment and enclosure shall meet the requirements of the 1996 edition of the National Electrical Code.
6. Electrical service equipment shall be enclosed in a cabinet constructed entirely of 14-gage, or heavier, 304 stainless steel. The cabinet shall be of welded construction with a brushed finish; anchoring points shall be inside the enclosure.
7. The cabinet shall be HYDROSAFE Model No. HS9, Strong Box, or approved equal.
8. The cabinet shall have a 304 stainless steel interior bulkhead separating the 120/240-volt electrical service section from the irrigation controller section.
9. No wood components shall be used in the enclosure.
10. Each section of the cabinet shall have full front opening doors with piano hinges, integral keylock and hasp and staple, or other provision, for padlock.
11. The cabinet shall be provided with cross-flow ventilation. Ventilation openings shall be located and designed to preclude rain, irrigation splash, vermin, and insects from entering the cabinet.
12. The controller side door shall have provision for mounting control schematics without the use of adhesives or fasteners. The service side door shall have a clear acrylic plastic window to allow the electrical meter to be read.
13. The cabinet shall have a duplex 15-amp, 120-volt receptacle with ground fault interrupter protection mounted on the interior service side.
14. Concrete footings and pads supporting the Electrical service equipment shall be 560-C-3250 and shall be no less than 150 mm (6") thick.
15. Anchor bolts to secure the service equipment to the concrete pad shall be 10 mm (3/8") diameter by 150 mm (6") long hot dip galvanized or stainless steel headed bolts with washers, without sleeves, conforming to section 304-1.7. Anchor bolts to secure the service equipment to the concrete pad shall be embedded in the concrete slab between 65 mm and 100 mm (2½" and 4").

## SECTION 801 INSTALLATION

### 801-2 EARTHWORK AND TOPSOIL PLACEMENT.

#### 801-2.2.2 Fertilization and Conditioning Procedures.

ADD the following:

The Contractor shall cultivate the surface of all areas to be planted or hydroseeded by discing, ripping or scarifying the finish grade. After cultivation the Contractor shall clear the planting areas of stones to the depth of cultivation and shall be rake the planting areas to a smooth friable and plantable surface. The Contractor shall cultivate all planting areas, except slopes steeper than 3-1/2:1 (horizontal to vertical), to a depth of 300 mm (12"). The planting areas that are slopes steeper than 3-1/2:1, shall be cultivated to a depth of 150 mm (6"). After cultivation, the soil amendments shown in table 801-2.2.2(A) shall be thoroughly blended 150 mm (6") deep in all planting areas. Except for planting pits the cultivation depths are designated as the root area. Backfill for planting pits shall conform to the requirements of section 801-4.5. After surface

preparation and application of the soil amendments shown in Table 801-2.2.2(A) the Contractor shall obtain a minimum of one test for each soil property listed in Tables 801-2.2.2(B) and 801-2.2.2(C) from each median planter, at least one test per 150 m (500') from each parkway and for each hectare (2.5 acres) of hydroseeded area and shall submit the results of said tests to the Engineer. The Contractor shall then adjust the soil properties to the acceptable ranges of soil properties shown in Tables 801-2.2.2(B) and 801-2.2.2(C) using such materials and methods as may be necessary. Organic soil amendment materials shall not be included in the samples used to determine compliance to the soil particle gradation requirements of Table 801-2.2.2(C). If adjustments are necessary, the soil shall be tested by the Contractor after such adjustments for each soil property listed in Table 801-2.2.2(B) and 801-2.2.2(C) to determine that the adjustments to the soil made by the Contractor result in soil properties within the acceptable range. The Contractor shall adjust the soil properties and show acceptable ranges prior to any planting or application of hydroseed slurry. Prior to the start of any planting or application of hydroseed slurry the surface and root area shall be evenly and thoroughly moistened to no less than 75 percent of field capacity. The Contractor shall certify, in writing, that the ground surface has been prepared in accordance with this section and shall request inspection by the Engineer prior to any planting or seeding. The Contractor shall obtain the Engineer's approval before any planting or hydroseeding.

**TABLE 801-2.2.2(A)  
SOIL AMENDMENTS**

Soil Amendment	Metric Application Rate	Approx. U.S. Application Rate
Agricultural Gypsum	500 g per square meter	100 lbs. per 1,000 square feet
Iron Sulfate	50 g per square meter	10 lbs. per 1,000 square feet
Calcium Carbonate Lime	500 g per square meter	100 lbs. per 1,000 square feet
Organic Soil Amendment	0.04115 cubic meters per square meter (average depth 41 mm)	5 cubic yards per 1,000 square feet (average depth 1 5/8")

**TABLE 801-2.2.2(B)  
SOIL PROPERTIES**

Soil Property	Acceptable Range	Test Method	Repeatability Range of Test
pH	6.5 to 7.3	Saturation Paste pH	± 0.1 pH
Dissolved Salts (E <sub>c</sub> )	< 4.0 dS m <sup>-1</sup>	Saturation Paste Soluble Salts	± 7%
Liquid Limit	N/A to 30	ASTM D 423	± 2
Plasticity Index	NP to 10	ASTM D 424	± 2



**TABLE 801-2.2.2(C)  
SOIL PARTICLE GRADATION**

Sieve Size	Percent Passing
19 mm ( <sup>3</sup> / <sub>4</sub> "	100
9.5 mm ( <sup>3</sup> / <sub>8</sub> "	95 - 100
4.75 mm (No. 4)	60 - 85
1.89 mm (No. 10)	40 - 75
475 μm (No. 40)	35 - 70
75 μm (No. 200)	30 - 70

For areas to receive planting of all types, excluding only hydroseeding, the Contractor shall amend the prepared soil by blending 200 g of 7-7-7 fertilizer per square meter (40 lbs. per 1,000 square feet) into the top 150 mm (6") of soil after the completion of adjustment of soil properties and acceptance of the planting area by the Engineer. The Contractor shall apply post-plant 12-4-6 fertilizer at the rate of 20 pounds per 1,000 square feet, 30 days after planting and every 30 days through the end of the maintenance period.

**801-2.3 Finish Grading.**

ADD the following:

The Contractor shall prepare the finish grade in hydroseed slope areas with a moderately rough texture to provide a suitable surface for adherence of the hydroseed mix.

**801-4 PLANTING.**

**801-4.1 General.**

ADD the following:

The Contractor shall perform actual planting during those periods when weather and soil conditions are suitable and in accordance with locally accepted horticultural practice and as approved by the Engineer. No planting shall be done in any area until it has been satisfactorily prepared in accordance with these specifications. Soil moisture level prior to planting shall be no less than 75 percent of field capacity. The Contractor shall obtain the Engineer's approval of planting pits before planting operations begin. For pit planted vegetation when the soil moisture level is found to be insufficient for planting, the Contractor shall fill the planting pits with water and allow them to drain before starting planting operations. No more plants shall be distributed in the planting area on any day than can be planted and watered on that day. The Contractor shall plant and water all plants as herein specified immediately after removal from their containers. Containers shall not be cut prior to placing the plants in the planting area. It shall be the responsibility of the Contractor to provide continuous horticultural services and temporary and/or permanent irrigation to all planted and hydroseeded areas so that the planted and hydroseeded vegetation is 100 percent healthy and thriving prior to, and throughout the, landscape maintenance period.

#### 801-4.2 Protection and Storage.

ADD the following:

The Contractor shall submit a sheltered and secure location for on-site plant storage area for the Engineer's approval prior to the delivery of any plant materials. Any plant determined by the Engineer to be wilted, broken, or otherwise damaged shall be rejected at any time during the project, whether in the ground or not. All plants shall be handled by their containers. Any plant that has been handled by its trunk or stem shall be rejected. All rejected plants shall be removed from the site immediately.

#### 801-4.3 Layout and Plant Location.

MODIFY as follows:

Planting areas shall be staked by the Contractor and the Contractor shall obtain the Engineer's approval of the planting layout before planting operations begin.

#### 801-4.5 Tree and Shrub Planting.

ADD the following:

The Contractor shall amend the backfill for planting holes to a thoroughly blended mixture of clean loamy soil meeting the requirements of Tables 801-2.2.2(B) and 801-2.2.2(C) and then blend the amendments listed in Table 801-4.5(A) into the backfill for planting holes.

**TABLE 801-4.5(A)  
BACKFILL AND AMENDMENTS FOR TREE AND SHRUB PLANTING**

Soil Amendment	Metric Application Rate	Approx. U.S. Application Rate
Agricultural Gypsum	18 kg per cubic meter	30 lbs. per cubic yard
Iron Sulfate	600 g per cubic meter	1 lb. per cubic yard
Calcium Carbonate Lime	6 kg per cubic meter	10 lbs. per cubic yard
Organic Soil Amendment	0.67 cubic meters per cubic meter	<sup>2</sup> / <sub>3</sub> cubic yards per cubic yard
Planting Tablets <sup>1</sup>	1 per 100 mm dia. pot container	1 per 4" dia. pot container
Planting Tablets <sup>1</sup>	2 per 19 liter container	2 per 5 gal. container
Planting Tablets <sup>1</sup>	1 per each 50 mm width of each box-size container	1 per each 2" width of each box-size container

<sup>1</sup> Planting tablet requirements are not cumulative and apply to the size container indicated.

Pruning shall be limited to the minimum necessary to remove injured twigs and branches, and to compensate for loss of roots during transplanting, but never to exceed one-tenth the branching structure. Pruning may be done only with the approval of, and in the presence of, the Engineer. Cuts over 19 mm (<sup>3</sup>/<sub>4</sub>" ) shall be painted with an approved tree wound paint.

#### 801-4.6 Plant Staking and Guying.

ADD the following:

The Contractor shall install all boxed trees per drawings L-1 and L-2 of the San Diego Regional Standard Drawings unless details shown on the project plans differ therefrom.

#### 801-4.8.2(b) Method B.

ADD the following:

The Contractor shall prepare hydroseeding slurry on the job site. Slurry additives shall arrive at the site in bags sealed and properly identified by the manufacturer. All specified additives and water shall be added on the job site at the rates specified and shall be thoroughly mixed at the job site. The Contractor shall add seed to the slurry after the fiber mulch has been thoroughly incorporated. The Contractor shall spray all areas with a uniform, visible coat using the green color of the mulch as a guide. The Contractor shall apply the slurry in a sweeping motion, in an arched stream so as to fall like rain allowing the mulch fibers to build on each other until a good coat is achieved and the material is spread, evenly, at the required rate per area. The Contractor shall use care not to drag spray hoses over container planted material and shall attempt to spray from the edges of the planting areas wherever possible. Any slurry mixture which has not been applied to the planting areas within four (4) hours after mixing is to be rejected and removed from the project at the Contractor's expense. Any slurry spilled into areas outside the limits of work shall be cleaned up at the Contractor's expense to the satisfaction of the Engineer. The Contractor shall assure that the site is properly prepared. The Contractor shall repair all tire ruts created by the equipment. Areas needing grading repair prior to hydroseeding shall be blended and floated to match surrounding grades. Areas having less than 80% plant coverage within thirty (30) days after the initial application shall be reseeded every twenty (20) days until 80% of the ground surface is evenly covered by hydroseeded or subsequently reseeded growth.

ADD the following:

#### 801-4.8.3.1 Weed Eradication.

The Contractor shall water all irrigated areas to be hydroseeded for three (3) weeks prior to hydroseeding to allow for germination of the weed seeds. The Contractor shall spray all weeds with a post emergent herbicide immediately after the completion of the three week irrigation period. After two (2) weeks, the Contractor shall again eradicate the weeds and complete the preparation of the soil prior to the application of the hydroseed mixes.

ADD the following:

#### 801-4.10 Erosion Control Matting Installation.

ADD the following:

##### 801-4.10.1 General.

Before installation of erosion control matting the Contractor shall complete all soil preparation, fine grading, and hydroseeding of the areas to receive erosion control matting.

ADD the following:

##### 801-4.10.2 Coordination with Hydroseeding.

Erosion control matting shall be installed by the Contractor immediately after the first application of hydroseed materials. In all cases the Contractor shall place the erosion control matting within three days after the first hydroseed material application. Should any seed in the hydroseed materials begin to germinate within the three-day period after application or before the installation of the erosion control matting, the installation of the erosion control matting shall be

considered as late and the Contractor shall disc the hydroseed materials into the top 100mm (4") of the underlying soil, condition the soil for hydroseeding, apply hydroseeding materials at the rates and of the type specified and then install the erosion control matting. No additional payment will be made for second or subsequent hydroseed applications resulting from late installation of erosion control matting.

ADD the following:

#### 801-4.10.3 Installation.

The Contractor shall install erosion control matting using the following techniques:

1. Begin at the top of the slope by placing the erosion control matting into a 150 mm (6") wide by 150 mm (6") deep trench with the end of the matting laid flat in the bottom of the trench.
2. Anchor the end of the erosion control matting with erosion control mat staples spaced no more than 300 mm (12") on centers placed at the intersection of the bottom and the downhill vertical face of the trench.
3. Roll the erosion control matting down the slope.
4. Staple the erosion control matting on an alternating grid consisting of three across and two across lines of staples in horizontal lines spaced 900mm (3') on centers.
5. Erosion control mat so stapled shall be spaced such that no less than 1 ¾ staples per square meter (1½ staples per square yard) are provided to anchor the erosion control matting.
6. Start the adjacent erosion control mat as in Item No. 1 of this section, overlapping the previously placed mat by no less than 50 mm (2").
7. Staple placement may be such as to use the staples used to secure the adjacent mat to secure both mats along their edges.

### 801-5 IRRIGATION SYSTEM INSTALLATION.

#### 801-5.1 General.

ADD the following:

The Contractor shall apply irrigation water as often and in sufficient amounts, as conditions may require, to germinate and establish the seed and keep the container plants healthy and growing. The Contractor shall lay out lines, valves, and other underground utilities and receive the approval of the Engineer before digging trenches. The Contractor shall be responsible for damages caused by its operations. Connections shall be made at approximately the locations shown on the drawings. The Contractor shall be responsible for unapproved changes. Permission to shut off any existing in-use water lines must be obtained 48 hours in advance, as to the date, time and exact length of time of each shut-off. The Contractor shall demonstrate that the entire irrigation system is under full automatic operation for a period of seven days prior to any planting.

#### 801-5.3 Irrigation Pipeline Installation.

ADD the following:

The Contractor shall install all pressure main line piping from the irrigation system so as to maintain 3.1 m (10') minimum horizontal separation from all potable water piping. Where reclaimed and potable water pressure mainline piping cross, the reclaimed water piping shall be installed below the potable water piping, sleeved in a pressure rating of 200 PSI SDR 21



“Alertline” PVC sleeve which extends a minimum of 3.1 m (10’) on either side of the potable water piping and be located to provide a minimum vertical clearance of 300 mm (12”) between the reclaimed and potable water lines. Conventional (white) PVC pipe Schedule 40 may be used for sleeving material if it is taped along its entire length with 75 mm (3”) wide purple warning tape which reads “Caution Reclaimed Water”.

For trenching through areas where topsoil has been spread, the Contractor shall deposit topsoil on one side of trench and subsoil on opposite side. Subsoil shall be free of all rocks 13 mm (½”) in diameter or larger, debris, and litter, prior to use as backfill. The Contractor shall repair any leaks and replace all defective pipe or fittings until lines meet test requirements. The Contractor shall not cover any lines until they have been inspected and approved by the Engineer for tightness, quality of workmanship, and materials. The Contractor shall not be backfill trenches until all required tests and observations are performed. Observations include sprinkler heads, all fittings, lateral and mainline pipe, valves, and direct burial wire.

#### 801-5.3.3 Plastic Pipeline.

ADD the following:

The Contractor shall store all pipe and fittings under cover until used, and all pipe and fittings shall be transported in a vehicle with a bed long enough to allow the length of pipe to lay flat so as not to be subjected to undue bending or concentrated external load at any point. Pipe ends and fittings shall be wiped with MEK, or equal, before welding solvent is applied. Welded joints shall be given a minimum of 15 minutes to set before moving or handling. All field cuts shall be beveled to remove burrs and excess before fitting and gluing together. The Contractor shall center load pipe with small amount of backfill to prevent arching and slipping under pressure. Joints shall be exposed for inspection during testing. Plastic-to-plastic joints shall be solvent-welded, using only solvent recommended by pipe manufacturer.

ADD the following:

#### 801-5.3.6 Installation of Brass Pipe.

The Contractor shall cut brass piping by power hacksaw, circular cutting machine using an abrasive wheel, or hand hacksaw. No piping shall be cut with metallic wheel cutter of any description. The Contractor shall ream and remove rough edges or burrs on all pipe so that smooth and unobstructed flow is obtained, place Teflon tape, Teflon dope, or approved equal on male threads only, and tighten to prevent any leakage. The Contractor shall tighten screwed joints with tongs or wrenches. Caulking is not permitted.

ADD the following:

#### 801-5.4.1 Valves.

ADD the following:

The Contractor shall install each control valve in a separate valve box with a minimum of 300 mm (12”) separation between valves and 150 mm (6”) from any fixed object or structure.

ADD the following:

#### 801-5.4.2 Valve Boxes.

The Contractor shall install no more than one valve per box. All boxes are to be marked as to the type of valve. Remote control valve boxes shall also indicate control station number.

ADD the following:

#### 801-5.4.3 Backflow Preventer.

The Contractor shall install backflow preventer assembly in accordance with manufacturer's specifications and as directed on drawings. Exact location and positioning shall be verified on the site by the Engineer.

#### 801-5.5.4 Sprinkler Head Adjustment.

ADD the following:

The Contractor shall flush and adjust all irrigation heads and valves for optimum performance and to prevent overspray onto walks, roadways buildings, walls, and other structures.

ADD the following:

#### 801-5.5.5 Drip Assembly.

The Contractor shall install drip emitter filter on the supply side of all electric pressure regulating control valve for all emitter systems. The Contractor shall install a flush valve on the discharge side of all drip laterals.

#### 801-5.6 Automatic Control System Installation.

ADD the following:

The Contractor shall install all portions of the electrical installation with materials and methods conforming to the requirements of the 1996 National Electrical Code. The Contractor shall provide no less than one control wire and one common ground wire to service each valve in system.

#### 801-5.7.3 Sprinkler Coverage Test.

ADD the following:

This test shall be accomplished before any ground cover is planted.

#### 801-6 MAINTENANCE AND PLANT ESTABLISHMENT.

ADD the following:

For hydroseeded areas, median planting and mitigation area, The Contractor shall maintain said areas for period of no less than 120 days or until final acceptance of the project, whichever is the greater. Mowing is not required for hydroseeded areas. The Contractor shall provide complete landscape maintenance of all planted areas. The work shall include, but not be limited to, watering, litter control, weed control, stake repair, cultivating, supplementary fertilization, repair of irrigation systems, and control of diseases and pests. The Contractor shall submit a written plan to control weeds, disease, and pest infestations in the planting areas and utilize City of Carlsbad Integrated Pest Management Plan (IMP).

The submittal shall conform to the requirements for shop drawings as specified in section 2-5.3 et seq. of the specifications. The Engineer shall approve all methods and materials for such

control. Upon approval, the Contractor shall implement the control measures, exercising extreme caution in using pesticides and taking all steps to ensure the safety of the public. Only licensed personnel will be permitted to perform toxic spraying work. During the plant establishment period, the Contractor shall furnish sufficient workers and equipment on a daily basis to perform the work required by this section. Any day when the Contractor fails to adequately carry out specified maintenance work, as determined necessary by the Engineer, will not be credited as one of the plant establishment days. All planting areas which are damaged by construction shall be repaired by the Contractor within twenty (20) days following completion of construction in such. The Contractor shall repair such damaged areas. The repair shall consist of bringing the damaged area back to final grade, preparing the soil, replanting the area with the same vegetation as originally specified, and maintaining the area to achieve acceptable plant establishment.

The Contractor shall provide temporary irrigation for hydroseeded areas for a minimum of 120 days to ensure adequate plant establishment. Towards the end of the maintenance period, the Contractor shall gradually reduce the amount of irrigation to allow plant adaptation to non-irrigated conditions. Upon the approval of the engineer, the temporary irrigation system shall be shut off at the end of the maintenance period. The hydroseeded areas must have their growth of 80% established and the coverage must be evenly successful over the entire hydroseeded area and adequate to prevent erosion no less than 30 days before the end of the maintenance period. Should the coverage not be achieved the maintenance period shall be extended until the required coverage is achieved plus an additional 30 day period. The Contractor shall call for a final inspection 30 days before the end of the maintenance period and at the end of the maintenance period. Failure to pass inspection will result in an extension of the maintenance period. The Contractor shall continue to provide maintenance for such time necessary to obtain conformance to the specifications.

#### 801-7 MEASUREMENT AND PAYMENT.

ADD the following:

The lump-sum or unit prices set forth in the contract documents shall include, but not be limited to, full compensation for furnishing all labor, materials, tools, and equipment and performing all work necessary to complete, maintain, and guarantee the planting and irrigation work described or specified in the contract documents, including soils testing and recommended soil amendments, seed and hydroseed slurry, tree stakes, bark mulch, erosion control matting, plant materials, temporary irrigation and permanent irrigation, including reduced-pressure back-flow preventer, ball valves, drip valve assembly, electric control valves, quick couplers, control wires, pull boxes, valve boxes, all piping and sleeves, electrical conduits, irrigation heads, drip emitters, bubblers, drip irrigation equipment, connection from electrical service to irrigation electrical meter, connection from meter to irrigation controller(s), installation of controller enclosure, concrete pads, preparation, correction, reproduction and lamination of "as-built" drawings, controller charts, assembly and submittal of the check list and operation and maintenance manuals and all appurtenances to the aforementioned items, as well as 120 days' maintenance and project guarantees. After completion of the project, the Engineer will retain \$8,000 of the total contract amount and will subsequently disburse the \$8,000 to the Contractor on a monthly

basis of \$2,000 per month. The Engineer reserves the right to stop payment until all punch list submitted to the Contractor every month are completed.

ADD the following:

801-9 **GUARANTEE.** The Contractor shall guarantee all 600 mm (24") box trees installed under the contract to live and grow for one year from the day of final acceptance of the contract work. The Contractor shall guarantee all other plant material, including ground covers to live and grow for a period of 30 days from the last day of the maintenance period or final acceptance of the contract work, whichever is the later. The Contractor shall replace, at its expense, all plant material found to be dead, missing, or in poor condition during the maintenance period within 5 days of discovery of such plant material. The Engineer shall be the sole judge as to the condition of the plant material. Plant material found to be dead or in poor condition within the guarantee period shall be replaced by the Contractor, at its expense, within 15 days of written notification. Replacements shall be made to the same specifications required for the original plantings.

The Contractor shall submit written vegetation, planting and irrigation guarantee in approved form that all work showing defects in materials or workmanship will be repaired or replaced at no cost to the Engineer for a period of one year from the date of acceptance by the Engineer. The Guarantee form shall be retyped on the Contractor's letterhead and contain the following verbiage:

***"Guarantee For Vegetation, Planting and Irrigation System For (Project Name)***

*We hereby guarantee that the vegetation, planting and irrigation system we have furnished and installed for (project name) is free from defects in materials and workmanship, and the work has been completed in accordance with the drawings and specifications. We agree to repair or replace any defect in vegetation, material or workmanship, including that due to ordinary wear and tear, which may develop during the periods specified in section 308-7 of the Standard Specifications and the Special Provisions of said project from date of completion of the Work or termination of any maintenance period, whichever is the later, and also to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the Agency.*

*This guarantee does not extend to unusual abuse or neglect that may occur subsequent to the date of completion of the Work or termination of any maintenance period, whichever is the later. We shall make such repairs or replacements within a reasonable time, as determined by the Engineer, after receipt of written notice. In the event of failure to make such repairs or replacements within a reasonable time after receipt of written notice from the Engineer, we authorize the Engineer to proceed to have said repairs or replacements made at our expense, and we will pay the costs and charges therefore upon demand.*

*Project: (Project Name)*

*Location: (Legal Description of Project Property)*

*Name of Contractor:*

*Address: (Of Contractor)*

*Telephone: (Of Contractor)*



*By: (Typed or printed names of signing Officer(s) of the Contractor authorized to bind the Contractor in legal matters)*

*Title: (Of said officer(s))*

*Signature(s)*

*Date of Execution:"*

ADD the following:

**801-9.1 Record Drawings.**

In addition to the requirements of section 2-5.4, herein, the Contractor shall prepare record drawings that show all changes in the work constituting departures from the original contract drawings, including those involving both constant-pressure and intermittent-pressure lines and appurtenances. The Contractor shall accurately record, on a daily basis, on one set of blue line prints of the irrigation drawings, all changes in work constituting departures from the original contract drawings, including changes in both pressure and nonpressure line. The Contractor shall post information on record drawings no later than the next working day after the work is installed. The Contractor shall record changes and dimensions in a legible and professional manner. When the drawings are approved by the Engineer the Contractor shall transfer all information to a set of reproducible photo mylar drawings. Items required to be shown shall be dimensioned by the Contractor from two permanent points of reference (buildings, monuments, sidewalks, curbs, pavement). The accuracy of location of all items to be shown on the drawings shall be 150 mm (6") in both the vertical and horizontal planes. All text and numerals placed on drawings shall be 0.30 mm ( $1/8$ ") in size. Facilities and items to be located in their horizontal and vertical positions and shown on the record drawings include all point(s) of connection, for water and electrical services:

- a) Routing of irrigation pressure mainlines
- b) Backflow preventors
- c) Ball, gate and check valves
- d) Irrigation control valves.
- e) Quick coupler valves
- f) Routing of service wires
- g) Routing of control wires
- h) Electrical service equipment
- i) Electrical junction boxes
- j) Irrigation controllers
- k) Sleeves for future connections
- l) Other equipment of a similar nature (as directed by the Engineer).

The Contractor shall keep the blue print drawings available for the Engineer's inspection at any time. The Contractor shall make all changes to reproducible drawings in waterproof black ink (no ball point pen). Changes in dimensions shall be recorded in a legible and professional manner. Record construction drawings shall be maintained at the job site during construction. The Contractor shall provide one set of mylar "record" drawings to the Engineer after submitting blueline prints of the proposed "record" drawings for, and obtaining their approval by, the Engineer.

#### ADD 801-9.2 Controller Chart.

The Contractor shall prepare record drawings which shall be submitted to the Engineer for approval by the Engineer before charts are prepared. The Contractor shall provide one controller chart of the maximum size the controller door will allow, for each controller supplied, showing the area covered by that automatic controller. The chart shall be a reduction of the actual record system drawing with a legend to explain all symbols. If the controller sequence is not legible when the drawing is reduced, The Contractor shall enlarge it to a size that will be readable when reduced. The Contractor shall photocopy the chart, with a pastel transparent color used to show area of coverage for each station. When completed and approved, the Contractor shall hermetically seal the chart between two pieces of plastic, each piece being a minimum 20 mils thick. The Contractor shall complete the charts and obtain the Engineers approval prior to final inspection of the irrigation system.

ADD the following:

#### 801-9.3 Operation and Maintenance Manuals.

The Contractor shall prepare and deliver to the Engineer, within 10 calendar days prior to completion of construction, all required and necessary descriptive material in complete detail and sufficient quantity, properly prepared in four individual bound copies. The descriptive material shall describe the material installed in sufficient detail to permit qualified operating personnel to understand, operate, and maintain all equipment. The Contractor shall include spare parts list and related manufacturer information for each equipment item installed. Each manual shall include the following:

- a) Index sheet stating Contractor's address and telephone number.
- b) Duration of Guarantee period.
- c) List of equipment, with names and addresses of manufacturer's local representative.
- d) Complete operating and maintenance instructions on all major equipment.
- e) In addition to the maintenance manuals, the Contractor shall provide the agency maintenance personnel with instructions for major equipment, and show written evidence to the Engineer at the conclusion of the work that this service has been rendered.

ADD the following:

#### 801-9.4 Check List.

The Contractor shall complete and forward signed and dated checklist to the Engineer before final acceptance of project.

ADD the following checklist at the end of the project, using the format shown:

- a) Plumbing permits (if none required, so note)
- b) Materials approval
- c) Pressure mainline test (by whom, and date)
- d) Record drawings completed (received by, and date)
- e) Controller chart completed (received by, and date)
- f) Materials furnished (received by, and date)

- g) Operation and maintenance manuals furnished (received by, and date)
- h) System and equipment operation instructions (received by, and date)
- i) Manufacturer warranties (received by, and date)
- j) Written guarantee by Contractor (received by, and date)

ADD the following section:

## SECTION 803 – BIOFILTRATION BMP

**803-1 GENERAL.** Biofiltration Soil Media (BSM) is intended to filter storm water and support plant growth while minimizing the leaching of potential pollutants. This specification includes requirements that apply to BSM used in stormwater treatment BMPs, including biofiltration and biofiltration. Biofiltration Soil Media is also referred to as Engineered Soil Media and Bioretention Soil Media.

### 803-2 BLENDED BSM CRITERIA AND TESTING REQUIREMENTS.

**803-2.1 General.** Blended BSM shall consist of 60% to 80% by volume sand, up to 20% by volume topsoil, and up to 20% by volume compost. Sand, Topsoil, and Compost used in BSM shall conform to requirements listed in Sections 803-3, 803-4, and 803-5, respectively. For biofiltration/biofiltration with outlet-controlled designs, it is likely that topsoil will need to be omitted or reduced to achieve permeability targets. Alternative mix components and proportions may be utilized, provided that the whole blended mix conforms to whole BSM criteria, detailed in Section 803-2.3 through 803-2.5. Alternative mix designs may include alternative proportions and/or alternative organic amendments. Alternative mixes are subject to approval by the County. Alternative mixes that use an alternative organic component (rather than compost) may be necessary when BMPs are installed in areas with nitrogen or phosphorus impaired receiving waters in order to meet more stringent BSM quality requirements as detailed in Section 803-2.5.

**803-2.2 Testing and Submittals.** At least 30 days prior to ordering materials, the Contractor shall submit the following to the County reviewer (upon request): source/supplier of BSM, location of source/supplier, a physical sample of the BSM, whole BSM test results from a third-party independent laboratory, test results for individual component materials as required, and description of proposed methods and schedule for mixing, delivery, and placement of BSM. The test results shall be no older than 120 days and shall accurately represent the materials and feed stocks that are currently available from the supplier.

Test results shall demonstrate conformance to agronomic suitability and hydraulic suitability criteria listed in Sections 803-2.3 and 803-2.4, respectively. BSM for use in BMPs in areas with water quality impairments in receiving waters shall also comply with applicable Chemical Suitability criteria in Section 803-2.5. No delivery, placement, or planting of BSM shall begin until test results confirm the suitability of the BSM. The Contractor shall submit a written request for approval which shall be accompanied by written analysis results from a written report of a testing

agency. The testing agency must be registered by the State for agronomic soil evaluation laboratory test fees shall be paid for by the Contractor.

**803-2.3 Agronomic Suitability.** The BSM shall conform to the requirements herein to support plant growth. BSM which requires amending to comply with the below specifications shall be uniformly blended and tested in its blended state prior to testing and delivery.

- a) pH range shall be between 6.0-8.5.
- b) Salinity shall be between 0.5 and 3.0 millimho/cm (as measure by electrical conductivity).
- c) Sodium absorption ratio (SAR) shall be less than 5.0.
- d) Chloride shall be less than 800 ppm.
- e) Cation exchange capacity shall be greater than 10 meq/100 g.
- f) Organic matter shall be between 2 and 5%.
- g) Carbon: Nitrogen ratio shall be between 12 and 40 (15 to 40 preferred).

Textural class fraction shall adhere to limits in Table 803-2.1, as determined by ASTM Method D422 or an approved alternative method:

**TABLE 803-2.3**

Textural Class (ASTM D422)	Size Range	Mass Fraction (percent)
Gravel	Larger than 2 mm	0 to 25 of total sample
Clay	Smaller than 0.005 mm	0 to 5 of non-gravel fraction

Test results shall show the following information:

- a) Date of testing.
- b) Project name, contractor name, and source of materials and supplier name.
- c) Copies of all testing reports including, at a minimum, analytical results sufficient to confirm compliance with all requirements listed in this section.

**803-2.4 Hydraulic Suitability.** BSM shall meet the have appropriate hydraulic properties for filtering stormwater. The BSM shall conform to the requirements herein to support plant growth. BSM which requires amending, shall be uniformly blended and tested in its blended state prior to testing and delivery.

**803-2.4.1 Testing.** The saturated hydraulic conductivity of the whole BSM shall be measured according to the method detailed in the measurement of hydraulic conductivity (USDA Handbook 60, method 34b), commonly available as part of standard agronomic soil evaluation, or ASTM D24234 Permeability of Granular Soils (at approximately 85% relative compaction Standard Proctor, ASTM D698). BSM shall conform to hydraulic criteria associated with the BMP design configuration that best applies to the facility where the BSM will be installed (Section 803-2.4.2 or 803-2.4.3).

**803-2.4.2 Systems with Unrestricted Underdrain System (i.e., media control).** For systems with underdrains that are not restricted, the BSM shall meet the minimum and maximum measured hydraulic conductivity found in Table 803-2.4 to ensure adequate flow rate through the BMP and longevity of the system but reduce excessive velocities through the media. In all cases, an upturned elbow system on the underdrain, measuring 9 to 12 inches above the invert of the underdrain, should be used to control velocities in the underdrain pipe and reduce potential for solid migration through the system.

**803-2.5 Chemical Suitability for Areas Draining to Impaired Receiving Waters.**

**803-2.5.1 General.** The chemical suitability criteria listed in this section do not apply to systems without underdrains, unless groundwater is impaired or susceptible to nutrient contamination. Limits for a given parameter only apply if that parameter is associated with a water quality impairment, priority water quality condition, and/or TMDL in the receiving water. Limits may be waived at the discretion of the County if it is determined that it is unreasonable to meet the specification using locally-available materials (available within 100 miles).

**803-2.5.2 Testing.** Potential for pollutant leaching shall be assessed using either the Saturated Media Extract Method (aka, Saturation Extract) that is commonly performed by agronomic laboratories or the Synthetic Precipitation Leaching Procedure (SPLP) (EPA SW-846, Method 1312). If the saturation extract method is used, samples may be rinsed with up to five pore volumes before collecting extract for analysis.

**803-3 SAND FOR BSM.**

**803-3.1 General.** Sand used in BSM should preferably be washed prior to delivery. If sand is not washed it must still meet sieve analysis requirements in Table 1.

**803-3.2 Gradation Limits.** A sieve analysis shall be performed in accordance with California Test 202, ASTM D 422, or approved equivalent method to demonstrate compliance with the gradation limits shown in Table 803-3.2. Fines passing the No. 200 sieve shall be non-plastic.

**TABLE 803-3.2**

Sieve Size (ASTM D422)	Percentage Passing Sieve (by weight)	
	Minimum	Maximum
3/8 inch	100	100
#4	90	100
#8	70	100
#16	40	95
#30	15	70
#40	5	55



Sieve Size (ASTM D422)	Percentage Passing Sieve (by weight)	
	Minimum	Maximum
#100	0	15
#200	0	5

803-4 TOPSOIL FOR BSM.

**803-4.1 General.** Topsoil shall be free of hazardous materials and shall be consistent with a common definition of topsoil. Decomposed granite and derivatives of decomposed granite are not considered to be topsoil for the purpose of this specification.

**803-4.2 Textural Class.** Topsoil shall be classified as a sandy loam or a loamy sand according to the US Department of Agriculture soil classification system. In addition, a textural class analysis shall be performed in accordance with ASTM D422, or an approved alternative method to demonstrate compliance with the gradation limits in Table 803-4.2.

**Table 803-4.2**

Textural Class (ASTM D422)	Size Range	Mass Fraction (percent)
Gravel	Larger than 2 mm	0 to 25 of total sample
Clay	Smaller than 0.005 mm	0 to 15 of non-gravel fraction

803-5 COMPOST FOR BSM.

**803-5.1 General.** Compost shall be produced at a facility inspected and regulated by the local enforcement agency for CalRecycle. Compost should also preferably be certified by the U.S. Composting Council’s Seal of Testing Assurance Program (USCC STA) or an approved equivalent program. Compost shall not be produced from biosolids feedstock.

**803-5.1.1 Gradation Limits.** A sieve analysis shall be performed in accordance with ASTM D 422 or approved equivalent method to demonstrate compliance with the gradation limits show in Table 803-5.1.1.

**Table 803-5.1.1**

Sieve Size (ASTM D422)	Percent Passing Sieve (by weight)
1/2"	97 to 100
2 mm	40 to 90

**803-5.1.2 Material Content.** Organic Material Content shall be 35% to 100% by dry weight and moisture shall be 25% to 60% wet weight basis. Physical contaminants (manmade inert materials) shall not exceed 1% by dry weight.

**803-5.2 Compost Testing.** Compost shall meet the following requirements as demonstrated through standard agronomic testing methods:

- a) **Carbon to nitrogen (C:N) ratio.** C:N shall be between 15:1 and 40:1, preferably above 20:1 to reduce the potential for nitrogen leaching/washout.
- b) **pH.** pH shall be between 6.0 and 8.5.
- c) **Soluble Salt Concentration.** Soluble Salt Concentration shall be less than 10 dS/m. (Method TMECC 4.10-A, USDA and U.S. Composting Council).
- d) **Stability.** Carbon Dioxide evolution rate shall be less than 3.0 mg CO<sub>2</sub>-C per g compost organic matter (OM) per day or less than 6 mg CO<sub>2</sub>-C per g compost carbon per day, whichever unit is reported. (Method TMECC 5.08-B, USDA and U.S. Composting Council). Alternatively, a Solvita rating of 5.5 or higher is acceptable.

**803-5.2.1 Pathogens and Pollutant Limits.** Select pathogens shall pass US EPA Class A standard, 40 CFR Section 503.32(a). Trace Metals shall pass US EPA Class A standard, 40 CFR Section 503.13, Table 1 for Ceiling Concentrations.

## 803-6 DELIVERY, STORAGE, HANDLING, AND PAYMENT.

**803-6.1 General.** BSM shall be thoroughly mixed prior to delivery using mechanical mixing methods such as a drum mixer. The Contractor shall protect soils and mixes from absorbing excess water and from erosion at all times.

**803-6.1.1 Delivery.** The Contractor shall not deliver or place soils in wet or muddy conditions.

**803-6.1.2 Storage.** The Contractor shall not store materials unprotected during large rainfall events (>0.25 inches). If water is introduced into the material while it is stockpiled, the Contractor shall allow the material to drain to the acceptance of the County before placement.

**803-6.1.3 Handling and Placement.** BSM shall be lightly compacted and placed in loose lifts approximately 12 inches (300 mm) to ensure reasonable settlement without excessive compaction. Compaction within the BSM area should not exceed 75 to 85% standard proctor within the BSM. Machinery shall not be used in the biofiltration facility to place the BSM. A conveyor or spray system shall be used for media placement in large facilities. Low ground pressure equipment may be authorized for large facilities at the discretion of the County. Placement methods and BSM quantities shall account for approximately 10% loss of volume due to settling. Planting methods and timing shall account for settling of media without exposing plant root systems.

**803-6.1.4 Hydraulic Suitability.** The County may request up to three double ring infiltrometer tests (ASTM D3385) or approved alternative tests to confirm that the placed material meets applicable hydraulic suitability criteria. In the event that the infiltration rate of placed material does not meet applicable criteria, the County may require replacement and/or de-compaction of materials.

## **803-6.2 Quality Control and Acceptance.**

**803-6.2.1 General.** Close adherence to the material quality controls herein is necessary in order to support healthy vegetation, minimize pollutant leaching, and assure sufficient permeability to infiltrate/filter runoff during the life of the facility. Amendments may be included to adjust agronomic properties. Acceptance of the material will be based on test results certified to be representative. Test results shall be conducted no more than 120 days prior to delivery of the blended BSM to the project site. For projects installing more than 100 cubic yards of BSM, batch specific tests of the blended mix shall be provided to the County for every 100 cubic yards of BSM along with a site plan showing the placement locations of each BSM batch within the facility.

## **803-7 AGGREGATE MATERIALS FOR BIOFILTRATION DRAINAGE LAYERS.**

**803-7.1 General.** This section provides material specifications for drainage layers below BSM in biofiltration BMPs. This consists of a two-layer filter course placed below the BSM and above an open-graded aggregate stone reservoir.

### **803-7.2 Rock and Sand Materials for Drainage Layers.**

**803-7.2.1 General.** All sand and stone products used in biofiltration drainage layers shall be clean and thoroughly washed.

**803-7.2.2 Choker Layer.** Graded aggregate choker material is installed as a filter course to separate BSM from the gravel layer. The purpose of this layer is to limit migration of sand or other fines from the BSM. The choker layer consists of two layers of choking material increasing in particle size. The top layer (closest to the BSM) of the filter course shall be constructed of thoroughly washed ASTM C33 Choker Sand as detailed in Table 200-1.5.5. The bottom layer of the filter course shall be constructed of thoroughly washed ASTM No. 8 aggregate material conforming to gradation limits contained in Table 200-1.2.1.

**803-7.2.3 Gravel Layer.** Open-graded aggregate material is installed below filter course layers to provide additional storm water storage capacity and contain the underdrain pipe(s). This layer shall be constructed of thoroughly washed AASHTO No. 57 open graded aggregate material conforming to gradation limits contained in Table 200-1.2.1.

### **803-7.3 Layer Thicknesses and Construction.**

**803-7.3.1 General.** Aggregate shall be deposited on underlying layers at a uniform quantity per linear foot (meter), which quantity will provide the required compacted thickness within the tolerances specified herein without resorting to spotting, picking up, or otherwise shifting the aggregate material.

**803-7.3.2 Choker Layer.** Each of the two filter course layers (top layer of ASTM C33 Choker Sand and bottom layer of ASTM No. 8) shall be installed evenly to a total thickness of 3 inches (75 mm). Both layers shall be spread in single layers. Marker stakes should be used to ensure uniform lift thickness.

**803-7.3.3 Gravel Layer.** The thickness of the aggregate drainage and storage layer (AASHTO No. 57) will depend on site specific design and shall be detailed in contract documents.

**803-7.3.4 Spreading.** Drainage layers shall be as delivered as uniform mixtures and each layer shall be spread in one operation. Segregation within each aggregate layer shall be avoided and the layers shall be free from pockets of coarse or fine material.

**803-7.3.5 Compacting.** Filter course material and aggregate storage material shall be lightly compacted to approximately 80% standard proctor without the use of vibratory compaction.

**803-8 SUMMARY.**

Summary of BSM specification requirements is included in Table 803-8.

**Table 803-8**

Component	Requirement
BSM Material Composition	Sand: 60-80% by volume Topsoil: 0-20% by volume Compost: 20% by volume
Alternative Blends Acceptable?	Yes, but they must meet performance-based specifications.
Sand Type	Washed sand conforming to particle size distribution
Topsoil Type	Sandy loam or loamy sand with clay < 15% and gravel < 25%
Compost Type	From a CalRecycle permitted facility. Biosolids derived materials are not acceptable
BSM Permeability	8-24 inches/hour for BMPs without outlet control; 15-80 inches/hour for BMPs with outlet control; testing is required to demonstrate.

Component	Requirement
Agronomic Suitability Requirements	Limits for salts and potential toxins. C:N ratio between 12 and 40.
Water Quality Related Limits?	Requirements related to specific pollutants when water quality of receiving waters is impaired for those pollutants.

## END OF SECTION

May need to add Section 2



## SECTION 2

### 01 11 00 SUMMARY OF WORK PART 1 GENERAL

#### 1.01 WORK COVERED BY CONTRACT DOCUMENTS.

- a. The Contractor shall perform Work and furnish materials, labor, tools, equipment or services that may be reasonably inferred as being required to produce the intended result, whether specifically called for in the Contract Documents, at no additional cost to the Agency.
- b. Visible, existing improvements for which no specific disposition is made on the Plans, but which interfere with the Work, shall be removed, and disposed of by the Contractor with the prior approval of the Engineer.
- c. The completed Work will provide the Agency with slope protection, including a new supporting walls and pedestrian improvements, as more fully described in the Drawings and the technical specifications. Provide all labor, material and equipment for the following:
  1. Mobilization & Demobilization
  2. Public Notification of Work
  3. Clearing and Grubbing
  4. Traffic Control Plan and Traffic Control Implementation
  5. Utility Locating and Potholing
  6. SWPPP Preparation, Implementation and Maintenance
  7. Dewatering
  8. Pavement Demolition
  9. Retaining Wall Demolition
  10. Remove Existing Subdrain Systems and Cleanouts
  11. Remove and Replace Existing Streetlight
  12. Remove/Abandon Existing Monitoring Well
  13. Structural Fill Import
  14. Earthwork: Excavate and Export
  15. Earthwork: Excavate and Fill
  16. Cable Railing
  17. Permanent Sediment Trap
  18. Curb Extension Structural BMP
  19. Signing and Striping
  20. Portland Cement Concrete Sidewalk
  21. Curb and Gutter
  22. Brow Ditch
  23. Rectangular Concrete Ditch
  24. Curb Ramp
  25. Sawcut and Replace Asphalt Concrete Paving
  26. CMU Retaining Wall

27. Soldier Pile Wall
  28. Stepped Planter Wall
  29. 18" Reinforced Concrete Pipe
  30. Modification to Existing Type F Catch Basin
  31. Modified Type F Catch Basin
  32. Type A Curb Outlet
  33. Replace Existing Manhole Lid with Locking Lid
  34. Connection at Existing Cleanout Structure
  35. Landscape Planting
  36. Irrigation
  37. Final Stabilization
  38. Irrigation Point of Connection System,
  39. other improvements as indicated.
- d. Location of the Project is at the intersection of Marina Drive and Park Drive in the City of Carlsbad, in the County of San Diego, California.
  - e. Work also includes: maintaining the safe passage of pedestrians past the Work area throughout the construction period; traffic control; and obtaining all permits needed to perform the indicated Work.

## **END OF SECTION**