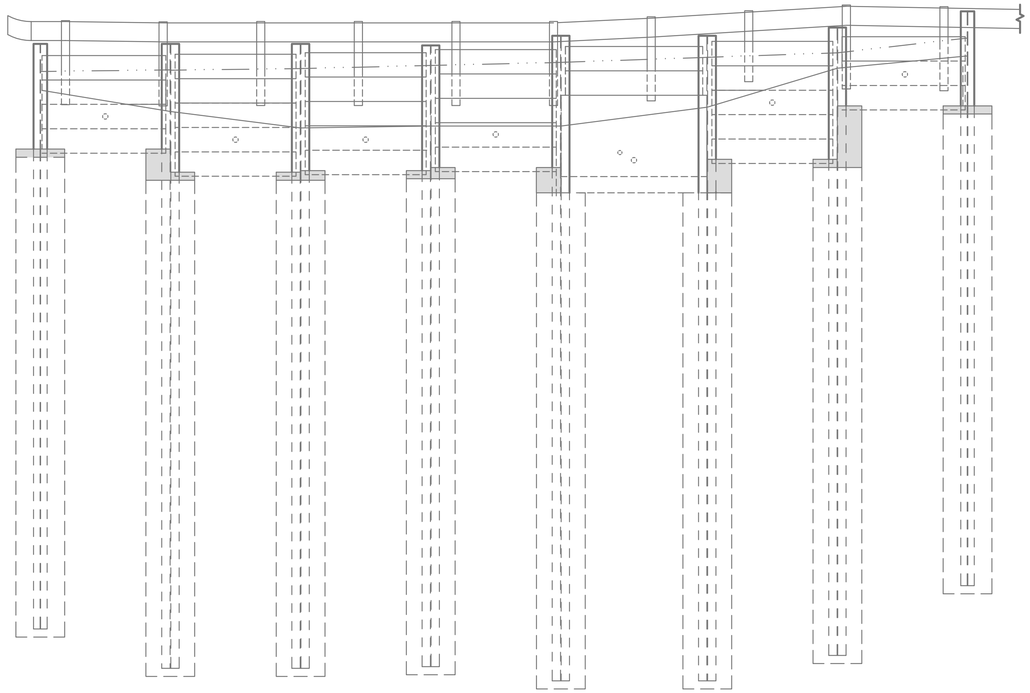
CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

AVON STREET (1923) BULKHEAD



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12	SB301	BULKHEAD SECTION AND DETAILS NO. 1
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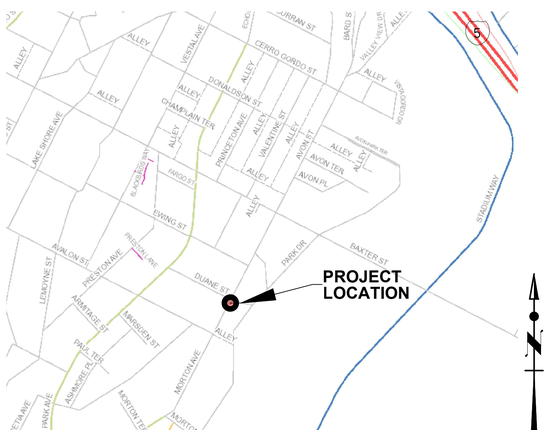


VICINITY MAP
NOT TO SCALE

PROJECT TEAM

PROJECT MANAGEMENT: **GEOTECHNICAL ENGINEERING DIVISION**
PATRICK SCHMIDT, P.E., G.E.
DIVISION ENGINEER
KRISTEN WONG, P.E.
PROGRAM CONTROL ENGINEER
DANIEL ORRIS, P.G. C.E.G.
PROJECT MANAGER
BENJAMIN MOORE, G.E.
PROJECT ENGINEER
DANIEL ORRIS, P.G. C.E.G.
CONSTRUCTION MANAGER

BID AND AWARD: **PROJECT AWARD AND CONTROL DIVISION**
ARSEN VOSKERCHYAN, P.E.
DIVISION MANAGER

GEOTECHNICAL: **GEOTECHNICAL ENGINEERING DIVISION**
PATRICK SCHMIDT, P.E., G.E.
DIVISION ENGINEER
BENJAMIN MOORE, G.E.
GEOTECHNICAL ENGINEER

STRUCTURAL: **STRUCTURAL ENGINEERING DIVISION**
SHIRISH MISTRY, S.E.
ASSISTANT DIVISION ENGINEER
MELVIN AGAGAS, S.E.
ASSISTANT DIVISION ENGINEER
STEVE MARTINEZ S.E.
STRUCTURAL ENGINEER
JIN CHAE, P.E.
STRUCTURAL ENGINEERING ASSOCIATE III

ENVIRONMENTAL: **ENVIRONMENTAL MANAGEMENT DIVISION**
MARIA MARTIN
DIVISION MANAGER

SURVEY: **SURVEY DIVISION**
WILLIAM KNIGHT, P.L.S
DIVISION ENGINEER

INSPECTION: **BUREAU OF CONTRACT ADMINISTRATION**
JOHN REAMER
DIRECTOR (INSPECTOR OF PUBLIC WORKS)

ENGINEERING
CITY OF LOS ANGELES

REGISTERED PROFESSIONAL ENGINEER
PATRICK J. SCHMIDT
No. 44937
Exp. 03/31/26
CIVIL
STATE OF CALIFORNIA

THIS PLAN WAS ELECTRONICALWONG SIGNED AND STAMPED

BUREAU OF ENGINEERING

VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: COVER SHEET
PROJECT: AVON STREET (1923) BULKHEAD
ADDRESS: 1923 AVON STREET

DEPARTMENT OF PUBLIC WORKS

NO. | REVISIONS: | DATE: | BY:

CIP NO. M1225

INDEX NO.

CITY OF LOS ANGELES

ALFRED MATA, P.E.
INTERIM CITY ENGINEER
2-2-2026
DATE
DEPUTY CITY ENGINEER/PROGRAM MANAGER
INTERIM CITY ENGINEER
DATE

WORK ORDER NO.
E1909302

SHEET NAME
GI01
SHEET 1 OF 13 SHEETS

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONWONG)

Sheet Version 4.0

NOTICE TO CONTRACTOR

GENERAL

1. SPECIFICATIONS: ALL WORK SHALL CONFORM TO THE LATEST EDITION AND SUPPLEMENTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC) ADOPTED BY THE BOARD OF PUBLIC WORKS OF THE CITY OF LOS ANGELES AS MODIFIED BY THE CORRESPONDING ISSUE OF ADDITIONS AND AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("BROWN BOOK") AND TO THE GENERAL CONDITIONS, AND THE GENERAL REQUIREMENTS.

2. THIS IMPROVEMENT CONSISTS OF WORK CALLED FOR ON THESE PLANS ONLY.

3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO STARTING WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IN WRITING OF ANY DISCREPANCIES AND REQUEST FOR INSTRUCTIONS.

4. THE ENGINEER DOES NOT WARRANT THE ACCURACY OF SCALED DIMENSIONS ON ANY PLAN. ALL DIMENSIONS SHALL BE AS DESIGNATED ON THE PLANS.

5. THE CONTRACTOR SHALL CONTACT DANIEL ORRIS OF THE GEOTECHNICAL ENGINEERING DIVISION (GED) AT (213) 847-0488 AT LEAST THREE WORKING DAYS IN ADVANCE OF REQUIRED OBSERVATIONS OR INSPECTION BY THE GEOTECHNICAL ENGINEER.

6. THE PROJECT PLANS AND SPECIFICATIONS SHALL BE KEPT AT THE JOB SITE AND UPDATED WITH RECORD INFORMATION. THE SET SHALL BE AVAILABLE TO THE ENGINEER AT ANY TIME. THE CONTRACTOR SHALL NOT DEVIATE FROM THE PROJECT PLANS AND SPECIFICATIONS WITHOUT THE APPROVAL BY THE ENGINEER.

7. APPROVAL BY THE INSPECTOR DOES NOT WAIVE REQUIREMENTS TO COMPLY WITH THE PLANS AND SPECIFICATIONS. ANY DETAIL WHICH FAILS TO BE CLEAR OR IS AMBIGUOUS MUST BE REFERRED TO THE ENGINEER FOR INTERPRETATION OR CLARIFICATION.

8. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWINGS, NOTES AND DETAILS PRIOR TO PROCEEDING WITH THE WORK.

9. THE CONTRACTOR SHALL PROTECT ALL PUBLIC AND PRIVATE PROPERTY DURING THE PERFORMANCE OF WORK DONE UNDER THIS CONTRACT. THE CONTRACTOR SHALL EXERCISE CARE THAT NO EXCAVATED MATERIAL OR DEBRIS RESULTING FROM THIS OPERATION SHALL RUN DOWN THE EXISTING SLOPE. ANY SUCH FALLEN MATERIAL OR DEBRIS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. EXISTING TREES AND SHRUBBERY WHEN NOT IN DIRECT CONFLICT WITH CONSTRUCTION ACTIVITIES SHALL BE PROTECTED. THE CONTRACTOR SHALL ALSO PROVIDE PROTECTION FOR THE PEDESTRIANS.

10. THE CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FROM THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, PRIOR TO COMMENCING ANY GRADING OR EXCAVATION. THE CONTRACTOR SHALL SUBMIT PROOF OF PERMIT TO THE INSPECTOR.

11. ALL EXISTING SUBSTRUCTURE LOCATIONS AND ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELEVATION OF SUBSTRUCTURES BEFORE COMMENCING CONSTRUCTION. ALL SUBSTRUCTURES SHALL BE PROTECTED AND/OR SUPPORTED.

12. ALL EXISTING UTILITIES SHALL BE LOCATED PRIOR TO THE EXCAVATION. THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTION TO PROTECT AND MAINTAIN CONTINUOUS SERVICE OF ALL EXISTING UTILITIES.

13. ALL INTERFERING EXISTING IMPROVEMENTS WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED TO THE EXTENT REQUIRED FOR THE SATISFACTORY COMPLETION OF THE NEW CONSTRUCTION INDICATED ON THE PLANS.

14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL RIGHTS TO USE PROPERTIES OUTSIDE OF THE PUBLIC RIGHT-OF-WAY WHICH THE CONTRACTOR DEEMS NECESSARY TO PERFORM ANY WORK UNDER THIS CONTRACT. ALL PRIVATE RIGHTS OF ENTRY SHALL BE OBTAINED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.

15. CITY SURVEY SHALL PROVIDE ALL NECESSARY CONSTRUCTION STAKES TO ESTABLISH LINES AND GRADES FOR THIS PROJECT. ADDITIONAL WORKING STAKES USED BY THE CONTRACTOR IN PERFORMING THE WORK ARE THE CONTRACTOR'S RESPONSIBILITY AND ARE TO BE SET FROM STAKES PROVIDED BY CITY SURVEY. THE CONTRACTOR MUST SUBMIT A WRITTEN REQUEST FOR RE-STAKING. ALL COSTS INCURRED FOR RE-STAKING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

16. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION OPERATIONS FOR APPROVAL BY THE ENGINEER PRIOR TO COMMENCING WORK.

17. ADVANCE CONSTRUCTION NOTICE SIGNS SHALL BE FURNISHED AND PLACED AS A PART OF THIS PROJECT IN ACCORDANCE WITH THE "BROWN BOOK" AND STANDARD PLAN S-791-1. CREDIT SIGN INFORMATION WILL BE PROVIDED TO THE CONTRACTOR PRIOR TO START OF CONSTRUCTION. ALL COST INCURRED IN FURNISHING, INSTALLING AND REMOVING THE SIGNS SHALL BE INCLUDED IN OTHER ITEMS FOR WHICH BIDS ARE ENTERED. THE CONTRACTOR SHALL GIVE NOTICE TO ABUTTING PROPERTY OWNERS OR OCCUPANTS OF THE ANTICIPATED CONSTRUCTION START DATE AT LEAST TEN (10) DAYS BEFORE THE START OF CONSTRUCTION.

18. THE AREA DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RE-VEGETATED WITH HYDRO-SEED OF NATIVE VEGETATION AND SHALL BE PROTECTED UNTIL THE VEGETATION HAS ESTABLISHED. THE ACTUAL EXTENT OF COVERAGE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

19. AFTER COMPLETION OF THE WORK, THE PROJECT AREA SHALL BE CLEARED OF DEBRIS AND RESTORED TO A CONDITION ACCEPTABLE TO THE ENGINEER.

20. ALL TRAFFIC CONTROLS IN THE WORK AREA SHALL CONFORM TO THE LATEST EDITION OF "WORK AREA TRAFFIC CONTROL HANDBOOK" (W.A.T.C.H.). LOCAL ACCESS SHALL BE PROVIDED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF TRANSPORTATION, DISTRICT OFFICE AT (213) 972-4990 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.

21. STANDARD PLANS FOR THIS PROJECT:
CITY OF LOS ANGELES
S-412-0 ..... EXTRUDED ASPHALT CONCRETE (AC) CURB
S-462-2 ..... METAL BEAM GUARDRAIL
S-463-3 ..... PEDESTRIAN PIPE GUARDRAILS & HANDRAILS
S-791-1 ..... ADVANCE CONSTRUCTION NOTICE SIGNS
S-410-2 ..... CURB AND GUTTERS
S-691-0 ..... CHAIN LINK FENCE AND GATES

22. CONTRACTOR SHALL COORDINATE ANY TEMPORARY RELOCATION OF UTILITIES IN ORDER TO ACCOMMODATE HIS CHOSEN MEANS AND METHODS OF CONSTRUCTION.

23. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER. THESE SHOP DRAWINGS AND SUBMITTALS SHALL INCLUDE, BUT NOT TO BE LIMITED TO, THE FOLLOWING :

   a. PROJECT SCHEDULE.
   b. CONSTRUCTION SEQUENCE.
   c. SHORING FOR EXCAVATION OR BRACING OF EXISTING STRUCTURE.
   d. CONCRETE MIX DESIGNS / SLURRY MIX DESIGN.
   e. USE OF ADMIXTURES AND / OR CURING COMPOUNDS IN CONCRETE.
   f. PRECAST CONCRETE LAGGING DESIGN.
   g. STRUCTURAL STEEL.
   h. STRUCTURAL STEEL PROTECTIVE COATING OR PAINT SYSTEMS SPECIFICATIONS.
   i. ASPHALT MIX DESIGN.
   j. METAL BEAM GUARDRAIL.
   k. HYDROSEED MIX DESIGN.
   l. OTHER SUBMITTALS AS REQUESTED BY THE ENGINEER, OR REQUIRED BY THE CONTRACT, AT NO ADDITIONAL COST TO THE CITY.
   m. THE SUBMITTAL LISTED ABOVE AS ITEMS c, d, e, f. AND g SHALL BE DESIGNED AND PREPARED BY A CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER. FORWARD EACH SUBMITTAL TO: GEOTECHNICAL ENGINEERING DIVISION, 1149 S. BROADWAY, SUITE 120, LOS ANGELES, CA 90015, ATTENTION: DANIEL ORRIS, CONSTRUCTION MANAGER.

24. PROJECT RECORD DOCUMENTS COMPRISED OF RECORD DRAWINGS (AS-BUILT FULL SIZE PLANS) THAT ARE DEVELOPED DURING CONSTRUCTION TO DELINEATE THE ACTUAL IN-PLACE CONSTRUCTED CONDITIONS SHALL BE PROVIDED BY CONTRACTOR TO THE ENGINEER. REQUIREMENTS FOR RECORD DRAWINGS ARE SPECIFIED IN SECTION 01783 OF THE GENERAL REQUIREMENTS.

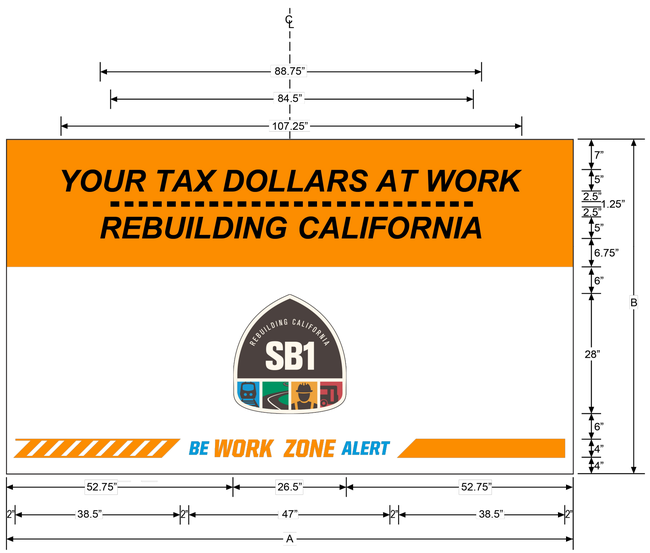
25. APPROVAL BY THE INSPECTOR DOES NOT MEAN APPROVAL FOR FAILURE TO COMPLY WITH THE PLANS OR SPECIFICATIONS, ANY DESIGN WHICH FAILS TO BE CLEAR OR IS AMBIGUOUS, MUST BE REFERRED TO ENGINEER FOR INTERPRETATION OR CLARIFICATION.

26. UNLESS SHOWN AS "EXISTING", ALL WORK INDICATED SHALL BE PROVIDED AS A PART OF THIS CONTRACT.

27. THE CONTRACTOR SHALL NOTIFY HOMEOWNERS, TENANTS AND PUBLIC EMERGENCY SERVICES (FIRE DEPARTMENT AND POLICE DEPARTMENT) AFFECTED BY THE WORK AT LEAST ONE WEEK PRIOR TO MOBILIZATION.

28. CONTRACTOR MAY BE REQUIRED TO USE LOW-HEIGHT DRILLING AND CRANE EQUIPMENT SO AS TO STAY 10'-0" CLEAR OF EXISTING OVERHEAD POWER AND COMMUNICATION LINES WHICH ARE LOCATED ABOVE THE STREET AND CAN NOT BE RELOCATED.

29. ADVANCED SENATE BILL 1 (SB1) NOTICE SIGN (48"x30") SHALL BE FURNISHED AND PLACED AS PART OF THIS PROJECT AS SHOWN BELOW:



1. PROVIDED DIMENSIONS ARE FOR THE 132"x78" SIGN PANEL.

2. FOR THE 48"X30" SIGN, MULTIPLY EACH HORIZONTAL DIMENSION OF THE 132"x78" SIGN PANEL BY APPROXIMATLY 0.364 AND EACH VERTICAL DIMENSION BY APPROXIMATELY 0.385. ADJUST SPACING AS NEEDED.

A	B
132	78
96	60
48	30

PLAN SHEET NAMING KEY

DISCIPLINE DESIGNATOR	SUBSET DESIGNATOR
G-GENERAL	I-INFORMATION C-CONTRACT
C-CIVIL	G-GENERAL S-SITE
V-SURVEY	F-FIELD
C-CIVIL	D-DEMOLITION B-GRADING U-UTILITIES P-PAVING I-MPROVEMENTS
S-STRUCTURAL	G-GENERAL S-SITE D-DEMOLITION B-SUBSTRUCTURE F-FRAMING

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REVISION DATES (DESIGN STAGE ONLY)

ENGINEERING
CITY OF LOS ANGELES
GED
GEOTECHNICAL ENGINEERING DIVISION

REGISTERED PROFESSIONAL ENGINEER
PATRICK J. SCHMIDT
No. 44937
Exp. 03/31/26
CIVIL
STATE OF CALIFORNIA

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

BUREAU OF ENGINEERING
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: NOTICE TO CONTRACTOR
PROJECT: AVON STREET (1923) BULKHEAD
ADDRESS: 1923 AVON STREET

DEPARTMENT OF PUBLIC WORKS
BY:
DATE:
NO. REVISIONS:
INDEX NO.

CIP NO. M1225

CITY OF LOS ANGELES
ALFRED MATA, P.E.
INTERIM CITY ENGINEER

			DATE:
DESIGN GROUP			
ENGINEER:	KRISTEN LY, P.E.	LIC. NO. C80362	10/17/25
DESIGNED BY:	DANIEL ORRIS, P.G. C.E.G.		10/17/25
DRAWN BY:	ELEN SMILEY		10/17/25
CHECKED BY:	DANIEL ORRIS, P.G. C.E.G.		10/17/25
APPROVED BY:	PATRICK SCHMIDT, P.E., G.E.		

WORK ORDER NO. E1909302

SHEET NAME GI02

SHEET 2 OF 13 SHEETS

Sheet Version 4.0

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ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICAILS
AB	ANCHOR BOLT
A.C.	ASPHALT CONCRETE
ADDL	ADDITIONAL
ADJ	ADJACENT
AGG	AGGREGATE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALLOW	ALLOWABLE
ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
@	AT
BET	BETWEEN
BLDG	BUILDING
BLK	BLOCK
BM	BURNS-MCDONNELL
BOT	BOTTOM
BP	BASE PLATE
BS	BOTH SIDES
B&S	L.A. DEPARTMENT OF BUILDING & SAFETY
BSMT	BASEMENT
CAB	CRUSHED AGGREGATE BASE
CE	CIVIL ENGINEER
CHKD	CHECKERED
CIP	CAST-IN-PLACE
CIPP	CURED IN PLACE PIPE
CJ	CONSTRUCTION OR CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTER LINE
CLR	CLEAR/CLEARANCE
CLG	CEILING
CMB	CRUSHED MISCELLANEOUS BASE
COLA	CITY OF LOS ANGELES
CONC	CONCRETE
CONF	CONFEDERATION
CONT	CONTINUOUS OR CONTINUATION
CONTR	CONTRACTOR
CTR	CENTER
CU	CUBIC
DEFL	DEFLECTION
DEG	DEGREE
DEMO	DEMOLISH OR DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DIAG	DIAGONAL OR DIAGRAM
DIAPH	DIAPHRAGM
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DWG	DRAWING
E	EXIST
ECCL	ECCENTRIC LOAD
EF	EACH FACE
EI	STIFFNESS FACTOR
ELECT	ELECTRICAL
ENCL	ENCLOSURE OR ENCLOSED
ENG	ENGINEER(ING)
EQ	EQUAL OR EARTHQUAKE
EQUIP	EQUIPMENT
ES	EACH SIDE
EST	ESTIMATE(D)
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTENSION OR EXTERIOR
FEA	FINITE ELEMENT ANALYSIS
FF	FINISH FLOOR
FIG(S)	FIGURE(S)
FIN	FINISHE(D)
FGR	FINISHED GRADE
FP	FULL PENETRATION
FS	FAR SIDE
FT	FOOT OR FEET
GEN	GENERAL
GW	GROUND WATER
GWB	GYPSUM WALL BOARD
HDPE	HIGH DENSITY POLYETHYLENE
HS	HEADED STUD
HSA	HEADED STUD ANCHOR
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURE SEC
HT	HEIGHT
HVAC	HEATING/VENTILATING/ AIR CONDITIONING
ICBO	INT'L CONFERENCE OF BUILDING OFFICIALS
IN	INCH
INFO	INFORMATION
INT	INTERIOR
INT'L	INTERNATIONAL
INTER	INTERMEDIATE
INV	INVERT
JT	JOINT
JUNC	JUNCTION
JS	JUNCTION STRUCTURE
K	KIPS
KD	KILN DRIED
KSI	KIPS PER SQUARE INCH
KM	KILOMETER
LABC	LOS ANGELES BUILDING CODE
LARR	LOS ANGELES RESEARCH REPORT
LC	LOAD COMBINATION
Ld	DEVELOPMENT LENGTH
LG	LARGE
LLBB	LONG LEG BACK TO BACK
LLH	LONG LEGS HORIZONTAL
LLV	LONG LEGS VERTICAL
LOC	LOCATION
LT	LEFT
LVL	LEVEL(ING)
m	SLOPE
MAT	MATERIAL
MB	MACHINE BOLT OR METAL BEAM
MBGR	METAL BEAM GUARDRAIL
MC	MOVEMENT CONNECTION OR MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURE(R)(ED)
MID	MIDDLE
MIN	MINIMUM
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.(#)	NUMBER OR (POUNDS)
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OH	OVERHEAD
OPP	OPPOSITE
OPP/SIM	OPPOSITE SIDE SIMILAR
OSL	OUTSTANDING LEG
PAR	PARALLEL
PCC	PORTLAND CEMENT CONCRETE
PCCP	PRESTRESS CONCRETE CYLINDRICAL PIPE
PCF	POUNDS PER CUBIC FOOT
PERM	PERIMETER
PFB	PREFABRICATE(D)
PL	PLATE OR PROPERTY LINE
PLF	POUNDS PER LINEAR FOOT
PJP	PARTIAL JOINT PENETRATION
PP	POWER POLE
PR	PAIR
PROJ	PROJECTION
PS	PIPE STIFFNESS
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
QTY	QUANTITY
RECT	RECTANGULAR
REBAR	REINFORCEMENT BAR
REF PT	REFERENCE POINT
REINF	REINFORCEMENT
REQ'D	REQUIRED
REV	REVISION
RPMP	REINFORCED POLYMER MORTAR PIPE
RT	RIGHT
S	SOUTH
SDL	SUPERIMPOSED DEAD LOAD
SE	STRUCTURAL ENGINEER OR SEMI-ELLIPTICAL
SHT	SHEET
SIM	SIMILAR
SOG	SLAB ON GRADE
SPC (S)	SPACE(S)
SQ	SQUARE
SS	STAINLESS STEEL OR SANITARY SEWER
STAG	STAGGERED
STL	STEEL
SYM	SYMMETRICAL
TBD	TO BE DETERMINED
t	THICKNESS
T&B	TOP AND BOTTOM
TEMP	TEMPORARY
T	TENSION OR TENSILE
THD	THREADED
THK	THICK OR THICKNESS
TL	TOTAL LOAD
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOG	TOP OF GRATING OR GROUT
TOL	TOP OF LEDGER
TOW	TOP OF WALL
TS	TUBE STEEL OR TRAFFIC SIGNAL OR TRANSITION STRUCTURE
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UNF	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
VAR	VARIES
VB	VAPOR BARRIER OR VALVE BOX
VIF	VERIFY IN FIELD
W	WEST OR WIDTH
WDF	WOODEN FENCE
WF	WIDE FLANGE
W/	WITH
W/O	WITHOUT
WO	WORK ORDER
WP	WORK POINT
WT	WEIGHT
W/W	WALL TO WALL
XSTG	EXTRA STRONG
YD	YARD

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REVISION DATES (DESIGN STAGE ONLY)

Sheet Version 4.0

ENGINEERING
CITY OF LOS ANGELES
GED
GEOTECHNICAL ENGINEERING DIVISION

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

REGISTERED PROFESSIONAL ENGINEER PATRICK V. SCHMIDT No. 44937 Exp. 03/31/26 CIVIL STATE OF CALIFORNIA

BUREAU OF ENGINEERING
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: ABBREVIATIONS
PROJECT: AVON STREET (1923) BULKHEAD
ADDRESS: 1923 AVON STREET

DEPARTMENT OF PUBLIC WORKS

NO.	REVISIONS:	BY:	DATE:

CIP NO. M1225

INDEX NO.

CITY OF LOS ANGELES
ALFRED MATA, P.E. INTERIM CITY ENGINEER

DESIGN GROUP			DATE:
ENGINEER:	KRISTEN LY, P.E.	LIC. NO. C90362	10/17/25
DESIGNED BY:	DANIEL ORRIS, P.G. C.E.G.		10/17/25
DRAWN BY:	ELEN SMILEY		10/17/25
CHECKED BY:	KRISTEN LY, P.E.		10/17/25
APPROVED BY:	PATRICK SCHMIDT, P.E., G.E.		

WORK ORDER NO. E1909302

SHEET NAME GI03

SHEET 3 OF 13 SHEETS

MATERIAL SYMBOLS

- EARTH (SECTION)
- EARTH (PLAN)
- COMPACTED EARTH (SURFACE/PLAN)
- LANDSCAPING (PLAN)
- AC PAVEMENT (PLAN/SECTION)
- SAND (PLAN/SECTION)
- CONCRETE (PLAN/SECTION)
- CMB (SECTION)
- GRATING (PLAN)
- ALUMINUM (SECTION)
- STEEL (SECTION)
- COMPACTED BACKFILL (SECTION)

ENLARGED PLAN IDENTIFICATION

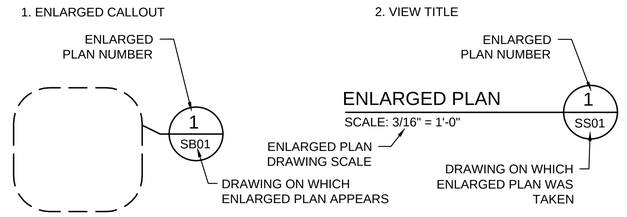
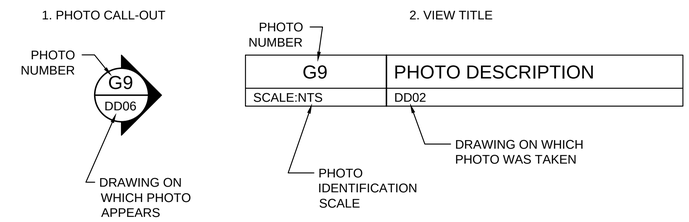


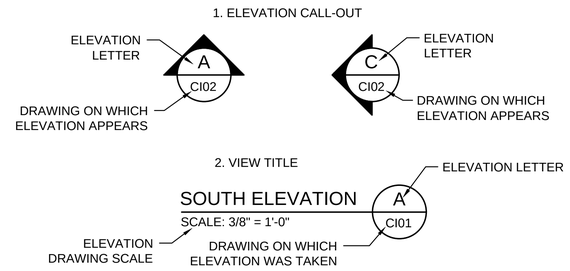
PHOTO IDENTIFICATION



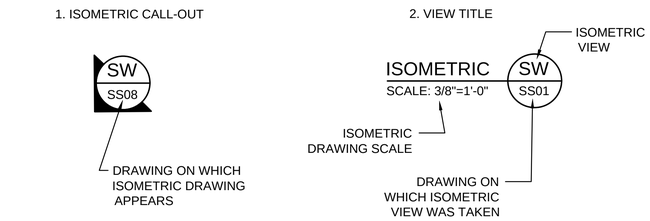
LINE SYMBOLS

- MATCH LINE
- EASEMENT LINE
- (CITY DISTRICT MAPS) PROPERTY LINE
- CENTER LINE
- FLOWLINE
- EXIST UTILITIES OR OBJECT TO BE DEMOLISHED
- EXISTING ELEMENT (LIGHT)
- PROPOSED ELEMENT (DARK)

ELEVATION IDENTIFICATION



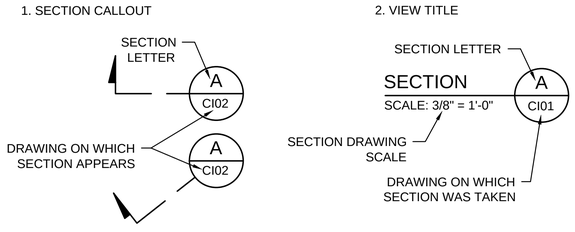
ISOMETRIC IDENTIFICATION



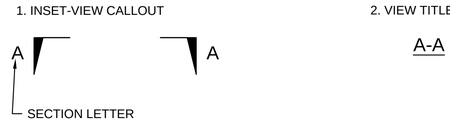
IDENTITY SYMBOLS

- REVISION TAG
- KEYNOTE
- TIE-IN
- GRID BUBBLE

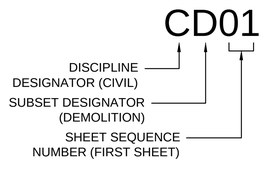
SECTION IDENTIFICATION



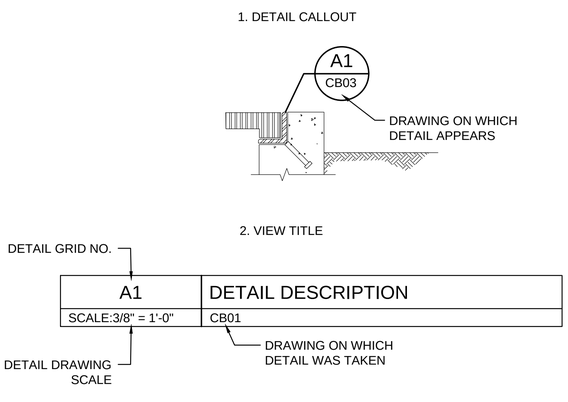
INSET-VIEW IDENTIFICATION



SHEET IDENTIFICATION



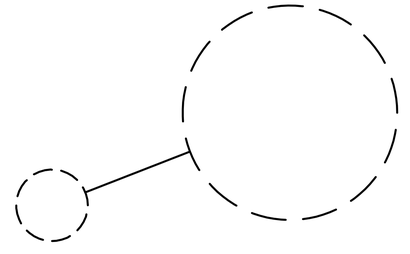
DETAIL VIEW IDENTIFICATION



NOTE: PARTIAL SECTIONS & SECOND TIER VIEWS ARE IDENTIFIED BY GRID LOCATION SIMILAR TO DETAIL CALL-OUTS

ENLARGEMENT BUBBLE IDENTIFICATION

1. ENLARGEMENT BUBBLE CALL-OUT



NORTH ARROW



THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

ENGINEERING
CITY OF LOS ANGELES
GED GEOTECHNICAL ENGINEERING DIVISION

REGISTERED PROFESSIONAL ENGINEER PATRICK J. SCHMIDT No. 44937 Exp. 03/31/26 CIVIL STATE OF CALIFORNIA

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

BUREAU OF ENGINEERING

VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: GENERAL SYMBOLS & IDENTIFICATIONS
PROJECT: AVON STREET (1923) BULKHEAD
ADDRESS: 1923 AVON STREET

DEPARTMENT OF PUBLIC WORKS

NO.	REVISIONS:	DATE:	BY:

CIP NO. M1225

INDEX NO.

CITY OF LOS ANGELES
ALFRED MATA, P.E.
INTERIM CITY ENGINEER

	DESIGN GROUP	LIC. NO. C90362	DATE:
ENGINEER:	KRISTEN LY, P.E.		10/17/25
DESIGNED BY:	DANIEL ORRIS, P.G. C.E.G.		10/17/25
DRAWN BY:	ELEN SMILEY		10/17/25
CHECKED BY:	KRISTEN LY, P.E.		10/17/25
APPROVED BY:	PATRICK SCHMIDT, P.E., G.E.		

WORK ORDER NO. E1909302

SHEET NAME GI04

SHEET 4 OF 13 SHEETS

Sheet Version 4.0

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LEGEND LINE TYPE

- BUILDING
- CONTOUR LINE
- CONTOUR INDEX LINE
- CURB
- FLOW LINE
- CONCRETE GUTTER
- SIDE WALK
- DRIVEWAYS
- EDGE OF CONCRETE
- EDGE OF PAVEMENT
- BERM
- WALL
- CHAIN LINK FENCE
- WOOD FENCE
- WROUGHT IRON FENCE
- POWER LINE

LEGEND SYMBOL

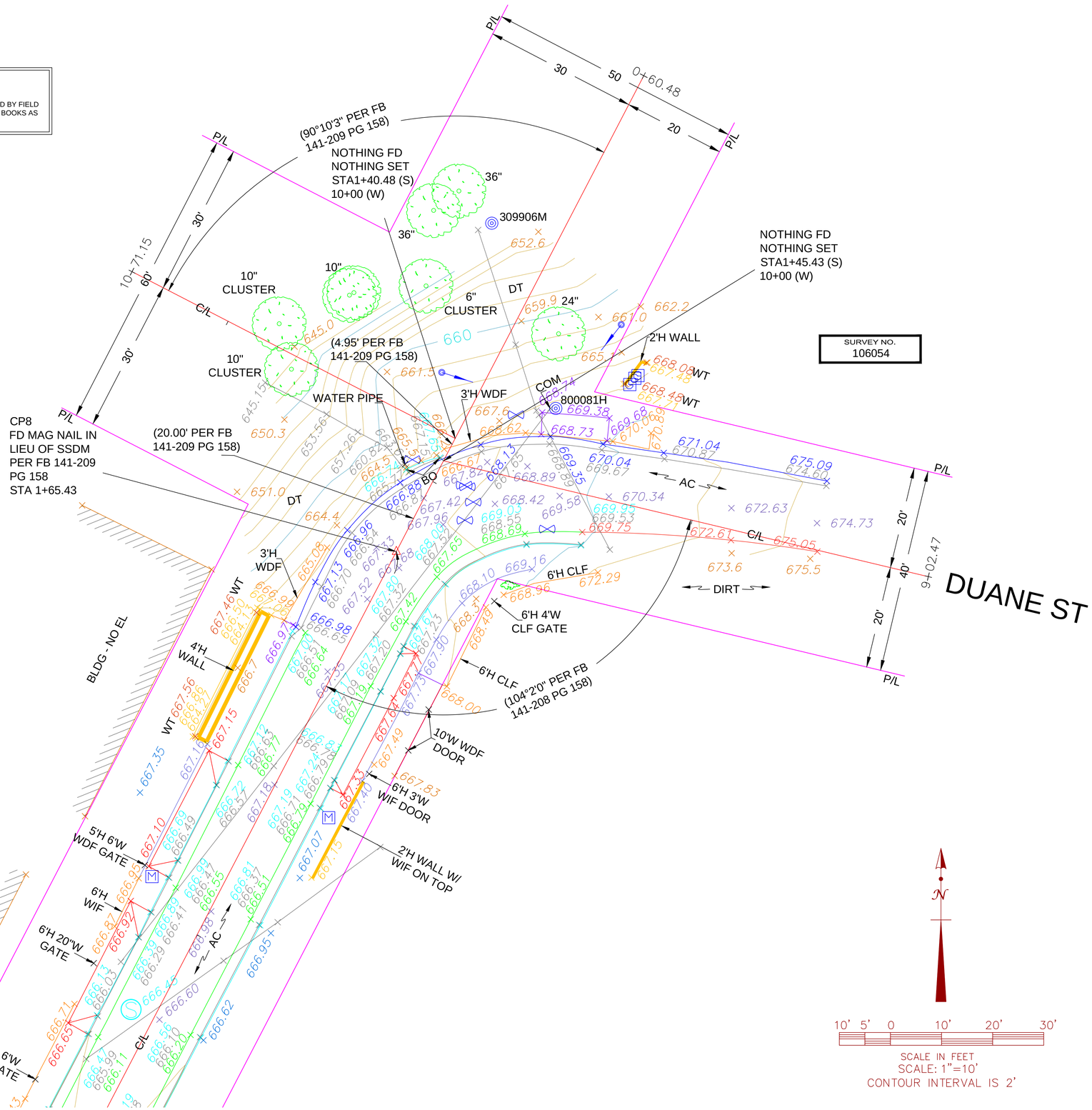
- SEWER MAINTENANCE HOLE
- WATER METER
- WATER VALVE
- GAS METER
- SHRUB
- POWER POLE
- GUY WIRE
- CONTROL POINT
- CONCRETE
- TREE

LEGEND ABBREVIATIONS

AC	ASPHALT CONCRETE
BO	BAD ORDER
C/L	CONTROL LINE
CLF	CHAIN LINK FENCE
CP	CONTROL POINT
FB	FIELD BOOK
FD	FOUND
H	HEIGHT
L&TAG	LEAD AND TAG
LACS	LOS ANGELES CITY SURVEYOR
LS	LICENSE SURVEYOR
P/L	PROPERTY LINE
PG	PAGE
S&W	SPIKE AND WASHER
ST	STREET
W	WIDTH
WDF	WOOD FENCE
WIF	WROUGHT IRON FENCE
WT	WALL TOP

NOTES:

STREET RIGHT OF WAY
STREET RIGHT OF WAYS ON THIS MAP WERE LOCATED BY FIELD SURVEY BY RETRACEMENT OF CITY ENGINEER FIELD BOOKS AS REFERENCED HEREON.



THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

VERTICAL CONTROL: FB 41164 PG 251-260 BM#12-24790 NAVD88 2006ADJ EL=514.992
HORIZONTAL CONTROL: FB 41164 PG 251-260

SHEET TITLE: SITE SURVEY
PROJECT: AVON STREET (1923) BULKHEAD
ADDRESS: 1923 AVON STREET

DEPARTMENT OF PUBLIC WORKS

NO.	REVISIONS:	DATE:	BY:

CIP NO. M1225
INDEX NO.

CITY OF LOS ANGELES
ALFRED MATA, P.E.
INTERIM CITY ENGINEER
SURVEY DIVISION

		DATE:
P.L.S.		
SURVEYOR: ERIC RAMOS		12/03/24
FIELD SURVEYOR:	RAUL RODRIGUEZ	01/06/25
DRAWN BY:	ELISE N. HERNANDEZ	1/16/25
CHECKED BY:	RAUL RODRIGUEZ	
APPROVED BY:		

WORK ORDER NO.
E1909302

SHEET NAME
VF01
SHEET 5 OF 13 SHEETS

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES:
(DESIGN STAGE ONLY)

Sheet Version 4.0

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CONCRETE

1. CONCRETE SHALL BE CLASS 650-CW-4000 FOR PRECAST CONCRETE PANEL & CAST-IN-PLACE WALL, CLASS 565-C-3250P FOR CONCRETE PILE ENCASEMENT, UNLESS OTHERWISE SPECIFIED. CEMENT SHALL CONFORM TO ASTM C150, TYPE II.
2. EXPOSED EDGES AND CORNERS SHALL BE PER DWG. SB301. VERTICAL SURFACES SHALL NOT BE CHAMFERED.
3. PILE EXCAVATION SHALL NOT BE LEFT OPEN OVERNIGHT. AFTER PLACEMENT OF STEEL WIDE FLANGE SECTION, DRILLED PILE SHAFT SHALL BE FILLED WITH CONCRETE AND SLURRY BEFORE THE END OF EACH WORKING DAY. CONCRETE SHALL BE PUMPED TO THE BOTTOM OF THE DRILLED SHAFT USING A SLICK LINE OR TREMIE, AND PLACED TO THE TOP OF THE EMBEDMENT DEPTH IN A CONTINUOUS OPERATION. DISCHARGE END OF THE SLICK LINE OR TREMIE SHALL BE MAINTAINED 5 FEET BELOW THE TOP OF THE CONCRETE AT ALL TIME. CONCRETE PLACEMENT SHALL BE DONE IN A MANNER SUCH THAT IT DOES NOT HIT THE SIDE OF THE DRILLED HOLE AND THE ALIGNMENT OF THE STEEL BEAM IS NOT AFFECTED. THE REMAINING PORTION OF THE DRILLED SHAFT SHALL BE FILLED WITH SLURRY TO THE FINISHED GRADE USING THE PLACEMENT METHOD FOR CONCRETE. IF TEMPORARY CASING IS INSTALLED, IT SHALL BE RAISED SLOWLY AS THE PILE EXCAVATION IS FILLED WITH CONCRETE DURING CONCRETE PLACEMENT. THE BOTTOM OF THE CASING SHALL REMAIN A MINIMUM OF 3 FEET BELOW THE LEVEL OF THE CONCRETE.
4. CONCRETE TRUCK AND/OR PUMPING TRUCK SHALL BE LOCATED 10 FEET (MIN.) AWAY WHEN PLACING CONCRETE FOR THE C.I.P. WALL AND CAISSON PILES.
5. CONCRETE SHALL CONFORM TO SECTION 201 OF THE SSPWC U.N.O.
6. ALL FLY ASH SHALL CONFORM TO C-618, CLASS F, U.N.O.
7. FINE AND COARSE AGGREGATE SHALL BE NONREACTIVE AND CONFORM TO ASTM C-33 AND SECTION 201-1.2.2 OF THE SSPWC.
8. ANCHOR BOLTS, DOWELS, REINFORCING STEEL, INSERTS, ETC. SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING CONCRETE. CONCRETE BLOCKS SHALL ONLY BE USED TO SUPPORT REINFORCING OFF GROUND.
9. ALL CONCRETE SHALL BE CURED IN ACCORDANCE WITH SECTION 303-1.10 OF THE SSPWC UNLESS OTHERWISE NOTED. THE CITY ENGINEER MUST FIRST APPROVE THE USE OF MEMBRANE CURING COMPOUNDS. IF APPROVED FOR USE, THE CONTRACTOR SHALL SUBMIT SAMPLES OF MATERIALS AND LOCATION OF USE FOR FINAL APPROVAL BY THE CITY ENGINEER.
10. BEFORE CONCRETE IS POURED, CHECK ALL TRADES TO INSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, EMBEDDED MATERIALS, ETC. RELATING TO THE WORK.
11. NO STAKE, STEEL OR WOOD WILL BE PERMITTED IN ANY CONCRETE POUR, UNLESS OTHERWISE SHOWN ON THE PLANS TO REMAIN. SUSPEND FORMS FROM ABOVE THE POUR.

REINFORCING STEEL

1. BAR REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60, INCLUDING ALL CURRENT REVISIONS.
2. DIMENSIONS TO REINFORCING BARS ARE TO BAR CENTERLINES, UNLESS NOTED OTHERWISE. BAR COVER IS CLEAR DISTANCE BETWEEN BAR AND THE CONCRETE SURFACE. MINIMUM BAR COVERS SHALL BE 2 INCHES, UNLESS NOTED OTHERWISE. REINFORCEMENT SHALL TERMINATE 2 INCHES FROM CONCRETE SURFACES, UNLESS NOTED OTHERWISE.
3. ALL BARS SHALL BE CLEAN OF RUST, GREASE AND OTHER MATERIALS LIKELY TO IMPAIR BOND.
4. WELDING OF REINFORCING BARS IS NOT PERMITTED, UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER.
5. UNLESS OTHERWISE DETAILED HEREIN OR APPROVED BY THE ENGINEER
   a. BARS SHALL BE LAPPED 45 DIAMETER OF THE SMALLER BAR SPLICED.
   b. BARS MAY BE CONTINUOUS IN LIEU OF SPLICING.
   c. BARS SHOWN SPLICED SHALL BE CONTINUOUS AT ALL OTHER LOCATIONS.
   d. SPLICES IN ADJACENT BARS SHALL BE STAGGERED AT LEAST ON SPLICE LENGTH.
   e. LONGITUDINAL BAR SPLICES FOR PILES SHALL BE LAPPED 62 BAR DIAMETERS, AND SHALL OCCUR WHERE SHOWN ON THE PLANS.
6. ALL BENDS SHALL BE MADE COLD
7. REINFORCING BARS SHALL BE SPLICED AND BENT IN STRICT ACCORDANCE WITH THE C.R.S.I. PUBLICATION AND DETAIL DRAWINGS. NO KINKS SHALL BE PERMITTED.
8. SPLICES IN ADJACENT BARS SHALL BE STAGGERED AT LEAST ONE SPLICE LENGTH. PROVIDE DOWELS OF SAME SIZE AND NUMBER FROM ADJACENT POUR, BOTH VERTICALLY AND HORIZONTALLY TO MATCH TYPICAL REINFORCING SHOWN. LAPS SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND DETAILS.
9. ALL DOWELS TO BE CLEANED AFTER POUR AND CARE SHALL BE TAKEN SO AS NOT TO BEND DOWELS EXTENDING FROM CONCRETE PREVIOUSLY POURED.
10. ALL HOOKS SHALL BE STANDARD HOOKS, UNLESS NOTED OTHERWISE.
11. ALL REINFORCING BARS SHALL BE ACCURATELY PLACED AND FIRMLY SUPPORTED AS REQUIRED BY THE ACI STANDARDS PRIOR TO POURING CONCRETE. REINFORCING SHALL HAVE THE FOLLOWING MINIMUM COVERAGE AND SHALL BE PLACED AS NEAR TO THE CONCRETE SURFACE AS THESE MINIMUMS WILL PERMIT UNLESS NOTED OR DETAILED OTHERWISE.
    CONCRETE POURING AGAINST EARTH.....3"
    FORMED CONCRETE IN CONTACT WITH EARTH OR WEATHER.....1-1/2"
    SLABS, WALLS, JOISTS.....1-1/2"
    BEAMS.....1-1/2"
    COLUMNS (TO MAIN STEEL).....2"

STRUCTURAL STEEL

1. UNLESS NOTED OTHERWISE, STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:
   W SHAPES: ASTM A992, HSS SHAPES: ASTM A500 GR
   CHANNELS, PLATES AND ANGLES: ASTM A36
2. STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE LATEST AISC SPECIFICATIONS AND CODE OF STANDARD PRACTICE BY A LICENSED FABRICATOR APPROVED BY THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY.
3. WELDING SHALL BE DONE BY WELDERS CERTIFIED BY THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY, USING APPROVED E70XX ELECTRODES ONLY, UNO. WELDING SHALL CONFORM TO APPLICABLE AWS WELDING CODES, LATEST EDITIONS. ALL SHOP WELDS SHALL BE DONE IN A SHOP APPROVED BY THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY. CONTINUOUS INSPECTION SHALL BE PROVIDED ON WELDS AS SPECIFIED IN THE LOS ANGELES BUILDING CODE, UNO. INSPECTION SHALL BE DONE BY A LOS ANGELES CITY LICENSED DEPUTY INSPECTOR AT THE CONTRACTOR'S EXPENSE.
4. ALL STEEL BEAM SURFACES NOT EMBEDDED IN CONCRETE SHALL BE COATED WITH A MINIMUM THICKNESS OF 5 MILS (TWO COATS, EACH 2.5 MILS) OF SHERWIN WILLIAMS MACROPOXY 646-100, POLYAMIDE EPOXY PRIMER (OR APPROVED EQUAL) FOLLOWED BY MINIMUM 5 MILS THICKNESS (TWO COATS, EACH 2.5 MILS) OF SHERWIN WILLIAMS PRO INDUSTRIAL O VOC WATERBORNE CATALYZED EGG-SHELL EPOXY PAINT (OR APPROVED EQUAL). FINISHES ARE TO MATCH THE COLOR OF THE GRAY FINISHED PRECAST CONCRETE AND SHALL BE APPLIED FOLLOWING TO THE MANUFACTURER'S TECHNICAL DATA SHEET APPLICATION RECOMMENDATIONS.
5. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY SHORING AND BRACING IF AND WHEN REQUIRED FOR SAFE ERECTION OF STEEL WORK.
6. ANY SPLICES IN STRUCTURAL STEEL TO ACCOMMODATE LOW-HEIGHT CONSTRUCTION SHALL BE FIELD-WELDED WITH FULL PENETRATION BUTT WELDS, AND CONTINUOUSLY INSPECTED BY DEPUTY CITY INSPECTOR.
7. CONNECTIONS NOT DETAILED ON DRAWINGS SHALL BE IDENTIFIED BY THE FABRICATOR. THE FABRICATOR SHALL PROPOSE A DETAIL AND INDICATE SUCH DETAIL AS "TO BE REVIEWED BY ENGINEER-OF-RECORD" ON SHOP-DRAWING SUBMITTED FOR REVIEW BY THE ENGINEER-OF-RECORD.
8. FABRICATOR SHALL VERIFY ALL DIMENSIONS WITH CIVIL DRAWINGS.

SOILS AND FOUNDATIONS

1. THE GEOTECHNICAL REPORT W.O. #E1909302, GEO FILE #23-058 DATED FEBRUARY 19, 2025 ALONG WITH SUPPLEMENT GEOTECHNICAL REPORT DATED JUNE 2, 2025 AND 2ND SUPPLEMENT GEOTECHNICAL REPORT DATED NOVEMBER 25, 2025 SHALL BE PART OF THIS PLAN SET.
2. THE CONTRACTOR SHALL CONFORM WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEERS' GEOTECHNICAL REPORT W.O. #E1909302, GEO FILE #23-058 DATED FEBRUARY 19, 2025 ALONG WITH SUPPLEMENT GEOTECHNICAL REPORT DATED JUNE 2, 2025 AND 2ND SUPPLEMENT GEOTECHNICAL REPORT DATED NOVEMBER 25, 2025.
3. THE WALL SUBDRAIN LAYER SHALL CONSIST OF CLEAN 3/8-INCH DIAMETER PEA GRAVEL WITH A NON-WOVEN GEOSYNTHETIC (FILTER FABRIC) PLACED BETWEEN THE GRAVEL AND BACKFILL SOIL. PEA GRAVEL SHALL BE VIBRATED IN PLACE USING CONCRETE VIBRATOR TO FULL DEPTH EVERY 3 FEET ON CENTER, THE FILTER FABRIC SHALL ALSO BE PLACED BETWEEN THE CLEAN GRAVEL AND THE OVERLYING SOIL CAP. THE FILTER FABRIC SHALL MEET THE REQUIREMENTS OUTLINED IN TABLE 213-2.2, TYPE 180N, OF THE "GREENBOOK".
4. FILL MATERIALS OVERLYING THE FILTER MATERIAL SHALL CONSIST OF THE ON-SITE FILL MATERIAL OR APPROVED IMPORT MATERIAL. EXCAVATED BEDROCK MAY NOT BE REUSED AS COMPACTED FILL. ALL FILL MATERIALS, INCLUDING THE ONSITE SOILS AND IMPORT MATERIAL, SHALL BE FREE OF ORGANIC MATTER, DEBRIS, AND OTHER DELETERIOUS MATERIALS. FILL MATERIALS SHALL NOT CONTAIN INORGANIC DEBRIS OR MATERIALS WITH ANY DIMENSION LARGER THAN 3 INCHES. MOISTURE CONDITIONING WILL BE REQUIRED PRIOR TO BEING USED AS COMPACTED FILL.
5. IMPORT FILL MATERIALS, IF USED, SHALL BE PREDOMINANTLY GRANULAR (MINIMUM 80% PASSING NUMBER 4 SIEVE AND 35% OR LESS PASSING THE NUMBER 200 SIEVE), NON-EXPANSIVE (EXPANSIVE INDEX LESS THAN 20). IMPORT MATERIAL SHALL BE REVIEWED AND APPROVED BY GEOTECHNICAL ENGINEERING DIVISION PRIOR TO IMPORTING TO THE JOB SITE. GEOTECHNICAL ENGINEERING DIVISION SHALL BE NOTIFIED A MINIMUM OF THREE WORKING DAYS PRIOR TO SCHEDULED IMPORTING OF SOIL TO THE PROJECT SITE.
6. FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS, MOISTURE-CONDITIONED BETWEEN OPTIMUM AND TWO PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT AND MECHANICALLY COMPACTED TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION, AS DETERMINED BY ASTM TEST METHOD D1557. CRUSHED MISCELLANEOUS BASE (CMB) IN THE PUBLIC RIGHT OF WAY SHALL BE MOISTURE-CONDITIONED BETWEEN OPTIMUM AND TWO PERCENT ABOVE OPTIMUM-MOISTURE AND COMPACTED TO A MINIMUM OF 95 PERCENT RELATIVE COMPACTION. CAB PLACED WITHIN 5-FEET OF THE BULKHEAD SHALL BE COMPACTED TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION.
7. FILL COMPACTION SHALL BE OBSERVED AND TESTED BY GEOTECHNICAL ENGINEERING DIVISION OR ITS REPRESENTATIVE. DENSIFICATION BY FLOODING OR JETTING OF ANY TYPE IS NOT ALLOWED UNDER ANY CIRCUMSTANCE. COMPACTED FILL SOILS SHALL BE KEPT MOIST, AT OR SLIGHTLY ABOVE THE SPECIFIED MOISTURE CONTENT AT THE TIME OF COMPACTION, BUT NOT FLOODED, UNTIL COVERED WITH SUBSEQUENT CONSTRUCTION. IF FILL SOILS ARE SOFTENED OR ERODED BY EXCESSIVE MOISTURE OR CONSTRUCTION DISTURBANCE, THEY SHALL BE REPLACED OR RE-COMPACTED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER BEFORE ADDITIONAL FILL OR CONSTRUCTION IS PLACED. CERTIFICATION AND INSPECTION APPROVALS FOR COMPROMISED SOILS ARE VOID AND INVALID.
8. THE GEOTECHNICAL ENGINEERING DIVISION SHALL INSPECT AND APPROVE ALL EXCAVATIONS, PRIOR TO INSTALLATION OF SOLDIER BEAM AND REBAR CAGE AND POURING OF CONCRETE, SHORING INSTALLATIONS, BACKFILL MATERIALS, AND BACKFILLING PROCEDURES. CALL DANIEL ORRIS OF THE GEOTECHNICAL ENGINEERING DIVISION FOR ALL NECESSARY INSPECTIONS AT (213) 847-0488 AT LEAST THREE WORKING DAYS PRIOR TO THE REQUIRED INSPECTION.
9. THERE IS THE POTENTIAL FOR SOIL CAVING TO OCCUR DURING PILE EXCAVATION. IF CAVING CONDITIONS ARE ENCOUNTERED, CASING SHALL BE USED TO SUPPORT THE SIDES OF THE EXCAVATIONS. IF CASING IS INSTALLED, THE INSIDE DIAMETER OF CASING SHALL BE AT LEAST AS LARGE AS THE DIAMETER OF THE PILE SHOWN ON THE PLANS. DRILLING SHALL BE ACCOMPLISHED WITHIN THE CASING. LOOSE OR DISTURBED SOIL/BEDROCK SHALL BE REMOVED FROM THE BOTTOM OF THE PILE EXCAVATION. DRILLED EXCAVATIONS SHALL BE OBSERVED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION OF STEEL BEAMS.
10. ALL TEMPORARY EXCAVATIONS SHALL CONFORM TO THE STATE OF CALIFORNIA CONSTRUCTION SAFETY ORDER (CAL/OSHA). UNSURCHARGED, TEMPORARY VERTICAL EXCAVATIONS SHALL NOT EXCEED 5 FEET IN HEIGHT. UNSURCHARGED EXCAVATIONS GREATER THAN 5 FEET AND UP TO A MAXIMUM OF 12 FEET SHALL BE SLOPED AS FOLLOWS: MAXIMUM INCLINATION OF 1-1/2:1 HORIZONTAL:VERTICAL (H:V) IN THE EXISTING FILL AND A MAXIMUM INCLINATION OF 1:1 (H:V) IN THE BEDROCK.
11. TEMPORARY SHORING, IF REQUIRED, SHALL BE DESIGNED IN ACCORDANCE WITH SECTION 306-1.1.6 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION (SSPWC), TITLE 8, DIVISION 1, CHAPTER 4, SUBCHAPTER 4 OF THE CALIFORNIA CODE OF REGULATIONS: CAL/OSHA CONSTRUCTION SAFETY ORDERS.
12. THE GEOTECHNICAL ENGINEERING DIVISION SHALL REVIEW AND APPROVE THE SHORING AND/OR UNDERPINNING PRIOR TO COMMENCING THE WORK. INSTALLATION OF SHORING, UNDERPINNING AND/OR SLOT CUTTING EXCAVATIONS SHALL BE PERFORMED UNDER THE CONTINUOUS INSPECTION AND APPROVAL OF THE GEOTECHNICAL ENGINEER.
13. THE EXISTING FILL AND NATIVE SOIL, IF ENCOUNTERED, SHOULD BE READILY EXCAVATED BY CONVENTIONAL EARTHMOVING EQUIPMENT IN GOOD OPERATING CONDITION; HOWEVER, EXCAVATIONS IN THE VERY DENSE SILTSTONE AND SANDSTONE BEDROCK MAY BE DIFFICULT AND MAY REQUIRE THE USE OF JACKHAMMERS OR OTHER TYPES OF PNEUMATIC EQUIPMENT. IN ADDITION, DRILLING IN THE BEDROCK MAY BE DIFFICULT AND MAY REQUIRE THE USE OF ROCK CORING EQUIPMENT.
14. IF CONTAMINATED SOIL IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEERING DIVISION (GED) FOR FURTHER INSTRUCTIONS REGARDING HANDLING AND DISPOSAL.
15. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEERING DIVISION (GED) FOR FURTHER INSTRUCTIONS ON DRILLING AND CONCRETE PLACEMENT.
16. ALL UNSUITABLE EARTH MATERIAL (I.E. BEDROCK) EXCAVATED DURING CONSTRUCTION MAY NOT BE REUSED AS COMPACTED FILL AND SHALL BE EXPORTED FROM THE SITE. IMPORT AND ON-SITE SOIL MAY BE USED FOR BACKFILL PROVIDED IT IS APPROVED, PRIOR TO PLACEMENT BY THE PROJECT GEOTECHNICAL ENGINEER.
17. THE PILES SHALL BE CAST IN PLACE, AND THE DIAMETER OF THE PILES SHALL BE AS SHOWN ON THE PLAN FOR FULL DEPTH. FOR CONSTRUCTION AND DRILLING OF PILE HOLES, REFER TO SECTION 205-3.3.2 OF THE STANDARD SPECIFICATIONS.
18. BOTTOM OF DRILLED SHAFTS, SHALL BE ADEQUATELY FREE OF LOOSE SOIL OR SLOUGH AT FULL DESIGN DEPTHS. HOLES MAY BE OVERDRILLED IN LIEU OF CLEANING, AS A CONVENIENCE TO THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE CITY FOR THE ADDITIONAL EXCAVATION AND MATERIALS.
19. THE GEOTECHNICAL ENGINEER SHALL OBSERVE ALL SUBDRAIN INSTALLATIONS PRIOR TO BACKFILL.
20. THE GEOTECHNICAL ENGINEERING DIVISION (G.E.D.) PROJECT GEOTECHNICAL ENGINEER SHALL OBSERVE THE SLOPE FOLLOWING THE CLEARING AND GRUBBING, BE PRESENT DURING UTILITY RELOCATION, BE PRESENT DURING DRILLING AND ALSO INSPECT AND APPROVE ALL DRILLED HOLES AND EXCAVATIONS PRIOR TO PLACEMENT OF STEEL CONCRETE, CONTROLLED LOW STRENGTH MATERIAL, OR COMPACTED FILL THE GEOTECHNICAL ENGINEER SHALL BE NOTIFIED AT (213)847-0538 AT LEAST TWO (2) WORKING DAYS PRIOR TO ANY REQUEST FOR INSPECTION.
21. ANY BACKFILL SHALL BE BENCHED INTO FIRM MATERIAL AND COMPACTED IN LEVEL 8-INCH LIFTS TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY AS PER ASTM 01557. EXCEPT THAT COHESION LESS SOIL WITH LESS THAN 16% FINER THAN 0.006 mm REQUIRE 95% OF THE MAXIMUM DRY DENSITY . (L.A.B.C. 91.7011.3) ALL COMPACTED FILL SHALL BE TESTED FOR ADEQUACY BY A CITY CERTIFIED LABORATORY.
22. ALL EARTHWORK INCLUDING EXCAVATIONS, FILL AND CUT SLOPES, REMOVAL AND RECOMPACTION OF SOIL SHALL CONFORM TO THE RECOMMENDATIONS OF GEOTECHNICAL REPORT ON FILE. ALL IMPORT MATERIAL SHALL BE APPROVED BY GEOTECHNICAL ENGINEERING DIVISION.
23. ALL FOUNDATIONS AND PILES SHALL BE POURED AGAINST UNDISTURBED NATURAL SOIL, OR COMPACTED FILL. THE PROJECT GEOTECHNICAL ENGINEER SHALL INSPECT ALL FOUNDATIONS, PILES AND SOIL PRIOR TO PLACING REINFORCING STEEL. THE PROJECT GEOTECHNICAL ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF INSPECTION

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

ENGINEERING
CITY OF LOS ANGELES
SED

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

REGISTERED PROFESSIONAL ENGINEER C 90554 CIVIL STATE OF CALIFORNIA

BUREAU OF ENGINEERING
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: STRUCTURAL NOTES
PROJECT: AVON STREET (1923) BULKHEAD
ADDRESS: 1923 AVON STREET, LOS ANGELES, CA 90026

NO.	REVISION DESCRIPTION	DATE	BY

CIP NO. M1225
INDEX NO.

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

INTERIM CITY ENGINEER	DATE
ALFRED MATA, P.E.	12/16/2025
DESIGN GROUP	LIC. NO.: C90554
ENGINEER: JIN CHAE, P.E.	12/16/2025
DESIGNED BY: JIN CHAE, P.E.	12/16/2025
DRAWN BY: JIN CHAE, P.E.	12/16/2025
CHECKED BY: MELVIN AGAGAS, S.E. / MARIAM YOUSSEF, P.E.	12/16/2025
APPROVED BY: SHALESH "SUNNY" PATEL, S.E.	12/16/2025

WORK ORDER E1909302

SHEET NAME SG001

SHEET 6 OF 13 SHEETS

IDENTITY SYMBOLS

MAINTENANCE HOLES

- MAINTENANCE HOLE
- LARGE MAINTENANCE HOLE
- STORM DRAIN MANHOLE
- POWER MANHOLE
- TELEPHONE MANHOLE
- SEWER MANHOLE

VALVES & METER BOXES

- GAS
- WATER
- NON-GAS, NON-WATER VALVE
- WATER METER
- GAS METER

PULL BOXES

- PULL BOX
- TRAFFIC SIGNAL
- STREET LIGHT
- ELECTRIC
- TELEVISION

LANDSCAPING

- IRRIGATION CONTROL BOX
- SPRINKLER
- OAK TREE
- TREE
- SHRUB
- PALM TREE

MISCELLANEOUS

- BOREHOLE
- GUARD POST/BOLLARD
- FIRE HYDRANT
- STAND PIPE
- CLEAN OUT
- VENT
- SIGN
- POWER POLE
- GUY WIRE
- LIGHT STANDARD
- TRAFFIC STANDARD
- LIGHT & TRAFFIC STANDARD
- CONTROL POINT
- MONITORING POINT
- MONITORING STATION
- MONITORING WELL
- CATCH BASIN
- AIR RELEASE AND VACUUM RELEASE VALVE PAD
- SURVEY POINT
- THRUST BLOCK
- UTILITY IDENTIFIER
- VALVE IDENTIFIER
- NEW METAL BEAM GUARDRAIL
- NEW PRECAST CONCRETE LAGGING
- NEW STEEL SOLDIER BEAM ENCASED IN CONCRETE PILE, TYP.
- REMOVAL LIMITS

LINE SYMBOLS

- CONTOUR LINE
- CONTOUR INDEX LINE
- CURB / GUTTER
- TOE
- GRADE CHANGE
- CHAIN LINK FENCE
- WOODEN FENCE
- WROUGHT IRON FENCE
- EXISTING GROUND PROFILE
- EXISTING GAS LINE
- WALL
- TRAFFIC CONTROL STRIPING
- RAILROAD

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REVISION DATES
(DESIGN STAGE ONLY)

ENGINEERING
CITY OF LOS ANGELES

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

C 90554 REGISTERED PROFESSIONAL ENGINEER CIVIL STATE OF CALIFORNIA

BUREAU OF ENGINEERING

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LEGEND

PROJECT: AVON STREET (1923) BULKHEAD

ADDRESS: 1923 AVON STREET, LOS ANGELES, CA 90026

NO.	REVISION DESCRIPTION	DATE	BY

CIP NO. M1225

INDEX NO.

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

ALFRED MATA, P.E. INTERIM CITY ENGINEER

DESIGN GROUP	LIC. NO.	DATE
ENGINEER: JIN CHAE, P.E.	C90554	12/16/2025
DESIGNED BY: JIN CHAE, P.E.		12/16/2025
DRAWN BY: JIN CHAE, P.E.		12/16/2025
CHECKED BY: MELVIN AGAGAS, S.E.		12/16/2025
APPROVED BY: SHAILESH "SUNNY" PATEL		12/16/2025

WORK ORDER
E1909302

SHEET NAME
SG002

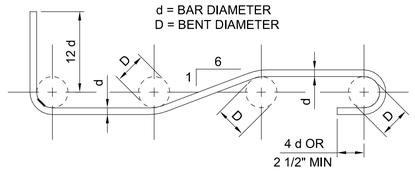
SHEET 7 OF 13 SHEETS

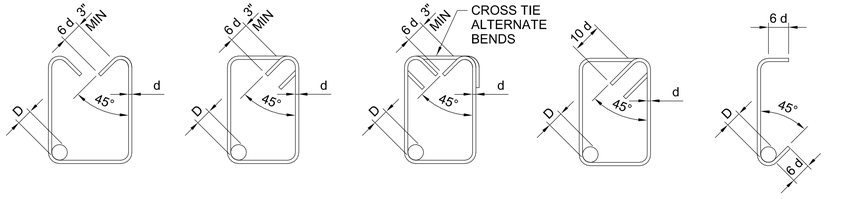
NOTES: 1. ALL BENDS SHALL BE MADE COLD.
2. #14 & #18 BARS SHALL BE BEND-TESTED AT LAB AND APPROVED PRIOR TO BENDING.
3. FOR SIZE AND SPACING OF ALL TIES AND STIRRUPS, REFER TO SCHEDULE AND/OR DETAILS, TYP.

D = 4 db FOR #3 - #5
D = 6 db FOR #6 - #8
D = 8 db FOR #9 - #11

BAR DIAMETER DISTANCES IN INCHES

	BAR SIZE								
	#3	#4	#5	#6	#7	#8	#9	#10	#11
3db	1-1/8	1-1/2	1-7/8	2-1/4	2-5/8	3	3-3/8	3-3/4	4-1/8
4db	1-1/2	2	2-1/2	3	3-1/2	4	4-1/2	5	5-1/2
6db	2-1/4	3	3-3/4	4-1/2	5-1/4	6	6-3/4	7-1/2	8-1/4
8db	3	4	5	6	7	8	9	10	11
12db	4-1/2	6	7-1/2	9	10-1/2	12	13-1/2	15	16-1/2



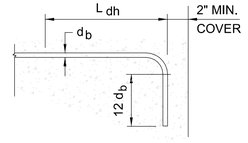


STD. BEAM STIRRUP | **BEAM HOOP STIRRUP BENDS (WHERE OCCURS)** | **BEAM HOOP - ALTERNATE (WHERE OCCURS)** | **COLUMN TIE** | **CROSS TIE**

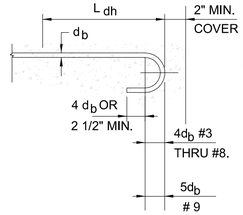
F1 TYP STIRRUP, HOOP AND TIE BENDS DETAILS

NOT TO SCALE

BAR SIZE	GENERAL USE f'c = 2500	GENERAL USE f'c = 3000	GENERAL USE f'c = 3250	GENERAL USE f'c = 4000	SPECIAL CONFINEMENT HOOK IS WITHIN TIES OR STIRRUPS SPACED < 3 db f'c = 2500	f'c = 3000	f'c = 3250	f'c = 4000
	GR 60	GR 60	GR 60	GR 60	GR 60	GR 60	GR 60	GR 60
#3	7	6	6	6	8	7	7	6
#4	9	8	8	7	10	9	9	8
#5	11	10	10	9	12	11	11	10
#6	13	12	12	10	15	14	13	12
#7	15	14	13	12	17	16	15	14
#8	17	16	15	14	20	18	17	16
#9	19	18	17	15	22	20	19	18



STANDARD 90° HOOK



STANDARD 180° HOOK

NOTES : 1. SIDE COVER SHALL BE 2 1/2" MINIMUM.
2. L dh SHALL BE INCREASED 33% (L dh X 1.33) FOR DOWELS EMBEDED IN LIGHT WEIGHT CONCRETE.

H9 MIN EMBEDMENT LENGTH Ldh FOR STANDARD HOOKS

NOT TO SCALE

REVISION DATES
(DESIGN STAGE ONLY)

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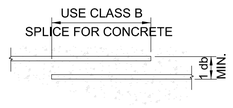
REINFORCEMENT LAP SPLICE IN INCHES										
BAR SIZE		3		4		5	6	7	8	
	f'c PSI	GR 40	GR 60	GR 40	GR 60	GR 60	GR 60	GR 60	GR 60	
CLASS A	2000	24 20	36 28	32 24	48 36	60 48	72 56	104 80	120 92	TOP BARS BOTTOM BARS
	3000	20 16	32 24	28 20	40 32	48 40	60 44	84 64	96 76	TOP BARS BOTTOM BARS
	4000	20 16	28 20	24 20	36 28	44 32	52 40	72 56	84 64	TOP BARS BOTTOM BARS
	5000	16 12	24 20	20 16	32 24	40 32	48 36	68 52	76 60	TOP BARS BOTTOM BARS
	6000	16 12	24 16	20 16	28 24	36 28	44 32	60 48	68 52	TOP BARS BOTTOM BARS
CLASS B	2000	32 24	48 36	44 32	64 48	76 60	92 72	136 104	152 120	TOP BARS BOTTOM BARS
	3000	28 20	40 32	36 28	52 40	64 48	76 60	108 84	124 96	TOP BARS BOTTOM BARS
	4000	24 20	36 28	32 24	44 36	56 44	68 52	96 72	108 84	TOP BARS BOTTOM BARS
	5000	20 16	32 24	28 20	40 32	48 40	60 48	84 68	96 76	TOP BARS BOTTOM BARS
	6000	20 16	28 24	24 20	36 28	44 36	56 44	80 60	88 68	TOP BARS BOTTOM BARS

LIGHT WEIGHT CONCRETE

REINFORCEMENT LAP SPLICE IN INCHES										
BAR SIZE		3		4		5	6	7	8	
	f'c PSI	GR 40	GR 60	GR 40	GR 60	GR 60	GR 60	GR 60	GR 60	
CLASS A	2000	20 16	28 24	24 20	36 28	44 36	56 44	80 60	88 68	TOP BARS BOTTOM BARS
	3000	16 12	24 20	20 16	32 24	36 28	44 36	64 48	72 56	TOP BARS BOTTOM BARS
	4000	16 12	20 16	20 16	28 20	32 24	40 32	56 44	64 48	TOP BARS BOTTOM BARS
	5000	12 12	20 16	16 12	24 20	28 24	36 28	52 40	56 44	TOP BARS BOTTOM BARS
	6000	12 12	16 12	16 12	24 16	28 20	32 24	48 36	52 40	TOP BARS BOTTOM BARS
CLASS B	2000	24 20	36 28	32 24	48 36	60 44	72 56	100 80	116 88	TOP BARS BOTTOM BARS
	3000	20 16	28 24	28 20	40 32	48 36	56 44	84 64	96 72	TOP BARS BOTTOM BARS
	4000	20 16	28 20	24 20	36 28	44 32	52 40	72 56	84 64	TOP BARS BOTTOM BARS
	5000	16 12	24 20	20 16	32 24	36 28	44 36	64 52	72 56	TOP BARS BOTTOM BARS
	6000	16 12	20 16	20 16	28 24	36 28	40 32	60 48	68 52	TOP BARS BOTTOM BARS

NORMAL WEIGHT CONCRETE

NOTES : 1. TOP BAR IS A HORIZONTAL BAR WHERE THE DEPTH OF THE CONCRETE CAST IN ONE LIFT BENEATH THE BAR EXCEEDS 12 INCHES. ALL OTHER BARS SHELL BE CONSIDERED BOTTOM BARS.
2. VERTICAL WALL REINFORCING SHALL BE SPLICED AS TOP BARS.
3. HORIZONTAL WALL REINFORCING SHALL BE SPLICED AS BOTTOM BARS, BUT NOT LESS THAN 30 BAR DIAMETER.
4. IF CONCRETE COVER IS LESS THAN ONE BAR DIAMETER AND / OR IF CENTER TO CENTER SPACING IS LESS THAN THREE BAR DIAMETERS, THEN INCREASE THE LAP SPLICE LENGTHS IN THE TABLE BY 50%.



A1 TYPICAL REINFORCEMENT BAR LAP SPLICE LENGTH CONCRETE

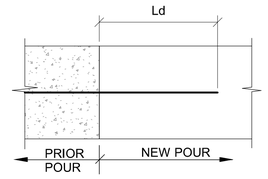
NOT TO SCALE

DEVELOPMENT LENGTH Id (in)			
BAR SIZE	f'c = 4500	f'c = 3250	f'c = 3250
	NWC	NWC	LWC
#3	16	16	16
#4	20	24	20
#5	24	28	24
#6	28	32	28
#7	40	48	36
#8	48	56	44

REINFORCED CONCRETE

DEVELOPMENT Id (in)		
BAR SIZE	f'm = 1500	f'm = 1500
	8" CMU	12" CMU
#3	16	16
#4	21	21
#5	26	26
#6	43	40
#7	60	46
#8	92	61

REINFORCED MASONRY



D9 DEVELOPMENT LENGTH

NOT TO SCALE

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ENGINEERING
CITY OF LOS ANGELES
SED
STRUCTURAL ENGINEERING DIVISION

PROFESSIONAL ENGINEER * CIVIL * STATE OF CALIFORNIA * REGISTERED
C 90554

BUREAU OF ENGINEERING

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TYPICAL REINFORCEMENT DETAILS
PROJECT: AVON STREET (1923) BULKHEAD
ADDRESS: 1923 AVON STREET, LOS ANGELES, CA 90026

NO.	REVISION DESCRIPTION	DATE	BY

CIP NO. M1225
INDEX NO.

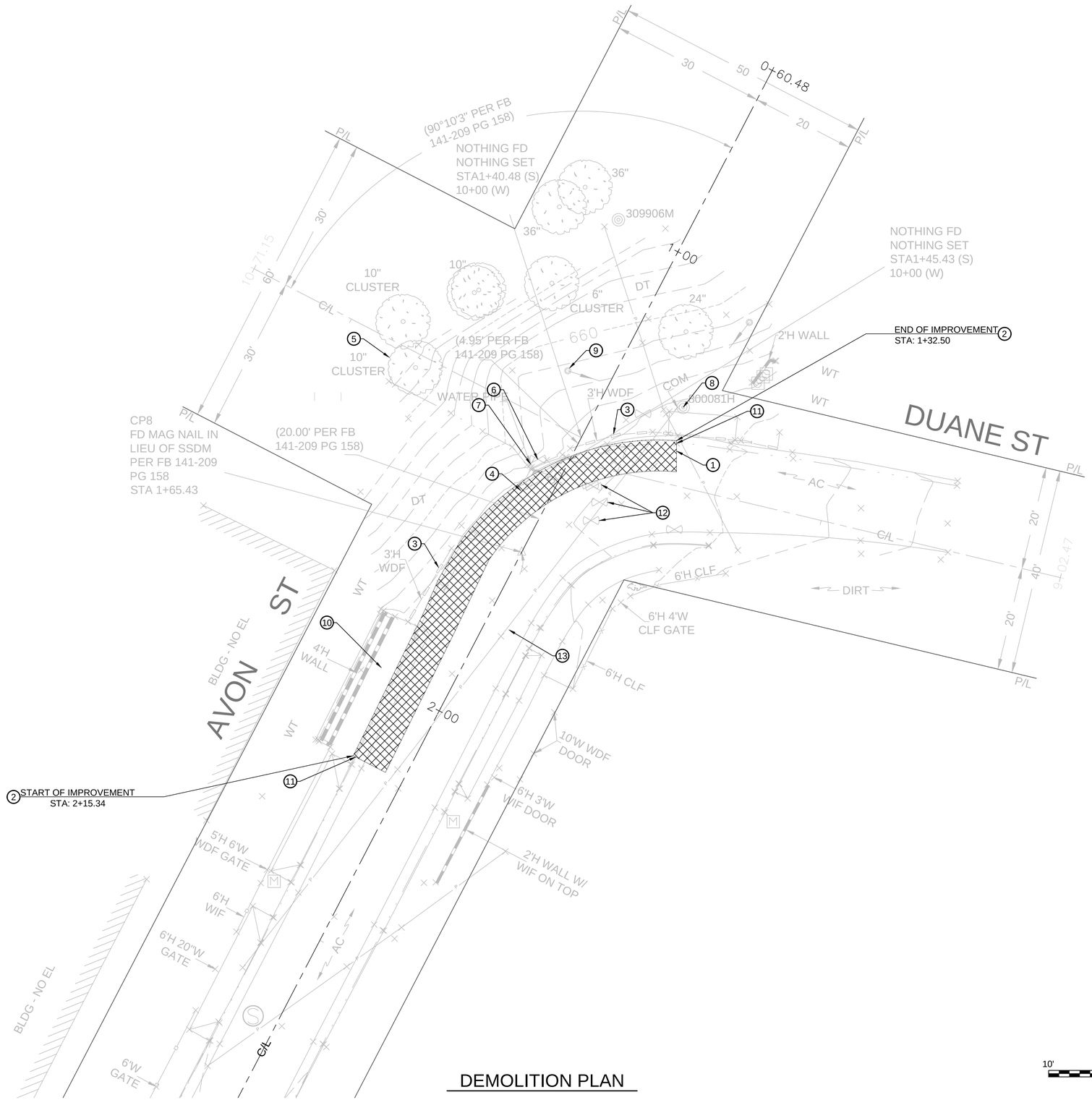
ALFRED MATA, P.E. INTERIM CITY ENGINEER DATE 12/16/2025

	DESIGN GROUP	LIC. NO.: C90554	12/16/2025
ENGINEER:	JIN CHAE, P.E.		12/16/2025
DESIGNED BY:	JIN CHAE, P.E.		12/16/2025
DRAWN BY:	JIN CHAE, P.E.		12/16/2025
CHECKED BY:	MELVIN AGAGAS, S.E.	MARIAM YOUSSEF, P.E.	12/16/2025
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.		12/16/2025

WORK ORDER E1909302

SHEET NAME SG003

SHEET 8 OF 13 SHEETS



DEMOLITION PLAN

10' 0 10' 20'
1" = 10'

KEY NOTES

1. REMOVE APPROXIMATELY 7'-0" WIDE (AVG) SECTION OF EXISTING AC PAVEMENT INCLUDING EXISTING AC BERM AND/OR CONCRETE CURB AND GUTTER. (APPROXIMATELY 600 SQ. FT. +/-).
2. STATIONS BASED ON CONTROL POINTS SHOWN ON ORIGINAL SURVEY.
3. EXISTING WOOD GUARDRAIL, TO BE REMOVED FROM CONSTRUCTION AREA.
4. EXISTING SANDBAGS, TO BE REMOVED FROM CONSTRUCTION AREA
5. EXISTING TREE TO REMAIN AND BE PROTECTED IN PLACE DURING CONSTRUCTION, TYP.
6. EXISTING 6"Ø LADWP WATER VALVES TO BE PROTECTED IN PLACE DURING CONSTRUCTION.
7. EXISTING LADWP WATER PIPE TO BE PROTECTED IN PLACE DURING CONSTRUCTION.
8. EXISTING POWER POLE TO BE PROTECTED IN PLACE DURING CONSTRUCTION.
9. EXISTING GUY WIRE TO BE PROTECTED IN PLACE DURING CONSTRUCTION.
10. EXISTING SIDEWALK TO REMAIN AND BE PROTECTED IN PLACE DURING CONSTRUCTION.
11. MATCH/JOIN NEW FLOWLINE TO EXISTING FLOWLINE PER DIRECTION OF THE PM.
12. WATER VALVE / MAINTENANCE HOLE COVERS, TO BE PROTECTED IN PLACED DURING CONSTRUCTION.
13. OVERHEAD POWER AND COMMUNICATION LINES, TO BE PROTECTED IN PLACE DURING CONSTRUCTION.

NOTES:

SEE SHEETS GI03 & GI04 FOR ABBREVIATIONS, GENERAL SYMBOLS AND IDENTIFICATIONS.

ALL STRUCTURES AND COMPONENTS OUTSIDE THE PUBLIC-RIGHT-OF-WAY THAT MAY AFFECT CONSTRUCTION SHALL BE PROTECTED IN-PLACE DURING CONSTRUCTION. PM / CONTRACTOR TO COORDINATE WITH ADJACENT PROPERTY OWNERS.

ALL CIVIL ROAD WORK IMPROVEMENT, INCLUDING BUT NOT LIMITED TO ADDITIONAL IMPROVEMENT OF FLOWLINE TRANSITIONS, DRAINAGE AND AC PAVEMENT & CURB, TO BE DETERMINED BY AND PER DIRECTION OF THE PM.

ALL BURIED UTILITY LINES (SEWER, LADWP, AT&T, AND GAS) SHOWN IN THESE PLANS ARE APPROXIMATE PER THE PM. CONTRACTOR TO VERIFY EXACT DEPTH AND LOCATION, AND SHALL PROTECT ALL EXISTING UTILITY LINES IN-PLACE DURING CONSTRUCTION, ANY DISCREPANCIES IN THE LOCATION AND INTERFERENCE DURING CONSTRUCTION OF THESE UTILITY LINES SHALL BE BROUGHT TO THE ATTENTION OF THE PM.

ENGINEERING
CITY OF LOS ANGELES
GED GEOTECHNICAL ENGINEERING DIVISION

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

REGISTERED PROFESSIONAL ENGINEER
KRISTEN LY PHAM
No. C90362
CIVIL
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: DEMOLITION PLAN
PROJECT: AVON STREET (1923) BULKHEAD
ADDRESS: 1923 AVON STREET

DEPARTMENT OF PUBLIC WORKS

NO.	REVISIONS:	DATE:	BY:

CIP NO. M1225
INDEX NO.

CITY OF LOS ANGELES
ALFRED MATA, P.E. INTERIM CITY ENGINEER

		DATE:
DESIGN GROUP		
ENGINEER:	KRISTEN LY, P.E. LIC. NO. C90362	10/17/25
DESIGNED BY:	DANIEL ORRIS, P.G. C.E.G.	10/17/25
DRAWN BY:	ELEN SMILEY	10/17/25
CHECKED BY:	DANIEL ORRIS, P.G. C.E.G.	10/17/25
APPROVED BY:	PATRICK SCHMIDT, P.E., G.E.	

WORK ORDER NO. E1909302

SHEET NAME SD101
SHEET 9 OF 13 SHEETS

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

Sheet Version 4.0

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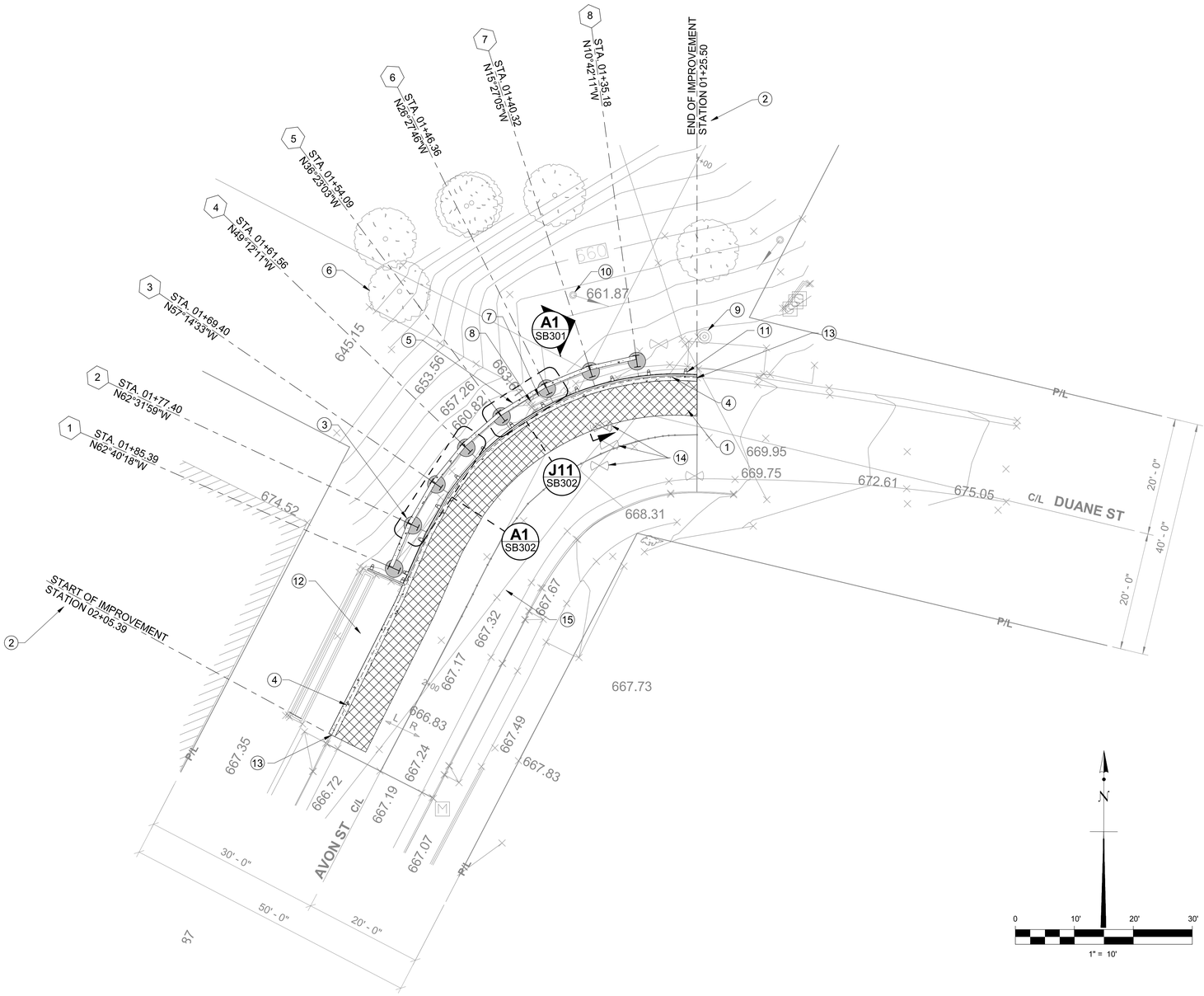

GENERAL PLAN

KEY NOTES

1. NEW 7' - 0" WIDE AND 6" THICK AC PAVEMENT ON 6" CMB (APPROXIMATELY 630 SQ. FT. +/-).
2. STATIONS BASED ON CONTROL POINTS SHOWN ON ORIGINAL SURVEY.
3. NEW BULKHEAD WITH PRECAST LAGGING.
4. NEW FLOWLINE AND STD PLAN S-410-2 TYPE C INTEGRAL CURB AND GUTTER.
5. NEW CAST-IN-PLACE WALL w/ TWO PRECAST LAGGING PANELS ON TOP. SEE DETAIL E1/SB302
6. EXISTING TREE TO REMAIN AND BE PROTECTED IN PLACE DURING CONSTRUCTION, TYP.
7. EXISTING 6"Ø LADWP WATER VALVES TO BE PROTECTED IN PLACE DURING CONSTRUCTION.
8. EXISTING LADWP WATER PIPE TO BE PROTECTED IN PLACE DURING CONSTRUCTION.
9. EXISTING POWER POLE TO BE PROTECTED IN PLACE DURING CONSTRUCTION.
10. EXISTING GUY WIRE TO BE PROTECTED IN PLACE DURING CONSTRUCTION.
11. NEW METAL BEAM GUARDRAIL, TYPE 2, PER CITY STD. PLAN S-462-2, TYP.
12. EXISTING SIDEWALK TO REMAIN AND BE PROTECTED IN PLACE DURING CONSTRUCTION.
13. MATCH/JOIN NEW FLOWLINE TO EXISTING FLOWLINE PER DIRECTION OF THE PM.
14. WATER VALVE / MAINTENANCE HOLE COVERS, TO BE PROTECTED IN PLACED DURING CONSTRUCTION.
15. OVERHEAD POWER AND COMMUNICATION LINES, TO BE PROTECTED IN PLACE DURING CONSTRUCTION.

NOTES:

1. SEE SHEETS GI03, GI04, AND SG002 FOR ABBREVIATIONS, GENERAL SYMBOLS, IDENTITY SYMBOLS, AND LINE SYMBOLS.
2. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL IDENTIFY/LOCATE THE DEPTH AND LOCATIONS OF EXISTING UTILITIES IN PROXIMITY TO THE PLANNED CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IMMEDIATELY IN WRITING OF ANY INTERFERENCE WITH THE PLANNED CONSTRUCTION AND REQUEST INSTRUCTIONS.
3. ALL BURIED UTILITY LINES (SEWER, LADWP, TELECOMMUNICATION, AND GAS) SHOWN ON THE PLAN ARE APPROXIMATE. UTILITY LINES NOT SHOWN ON THE PLAN SHALL BE FIELD VERIFIED BY THE PM/CONTRACTOR. CONTRACTOR SHALL POTHOLE AND/OR VERIFY DEPTH AND LOCATION OF EXISTING UTILITIES IN PROXIMITY TO THE BULKHEAD PER DIRECTION OF THE PM AND SHALL PROTECT ALL EXISTING. NOTIFY PM IMMEDIATELY OF ANY DISCREPANCIES OF UTILITY LINE IN LOCATION AND INTERFERENCE DURING CONSTRUCTION.

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REVISION DATES
(DESIGN STAGE ONLY)

ENGINEERING
CITY OF LOS ANGELES

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

REGISTERED PROFESSIONAL ENGINEER C 90554 CIVIL STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: GENERAL PLAN

PROJECT: AVON STREET (1923) BULKHEAD

ADDRESS: 1923 AVON STREET, LOS ANGELES, CA 90026

NO.	REVISION DESCRIPTION	DATE	BY

CIP NO. M1225

INDEX NO.

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

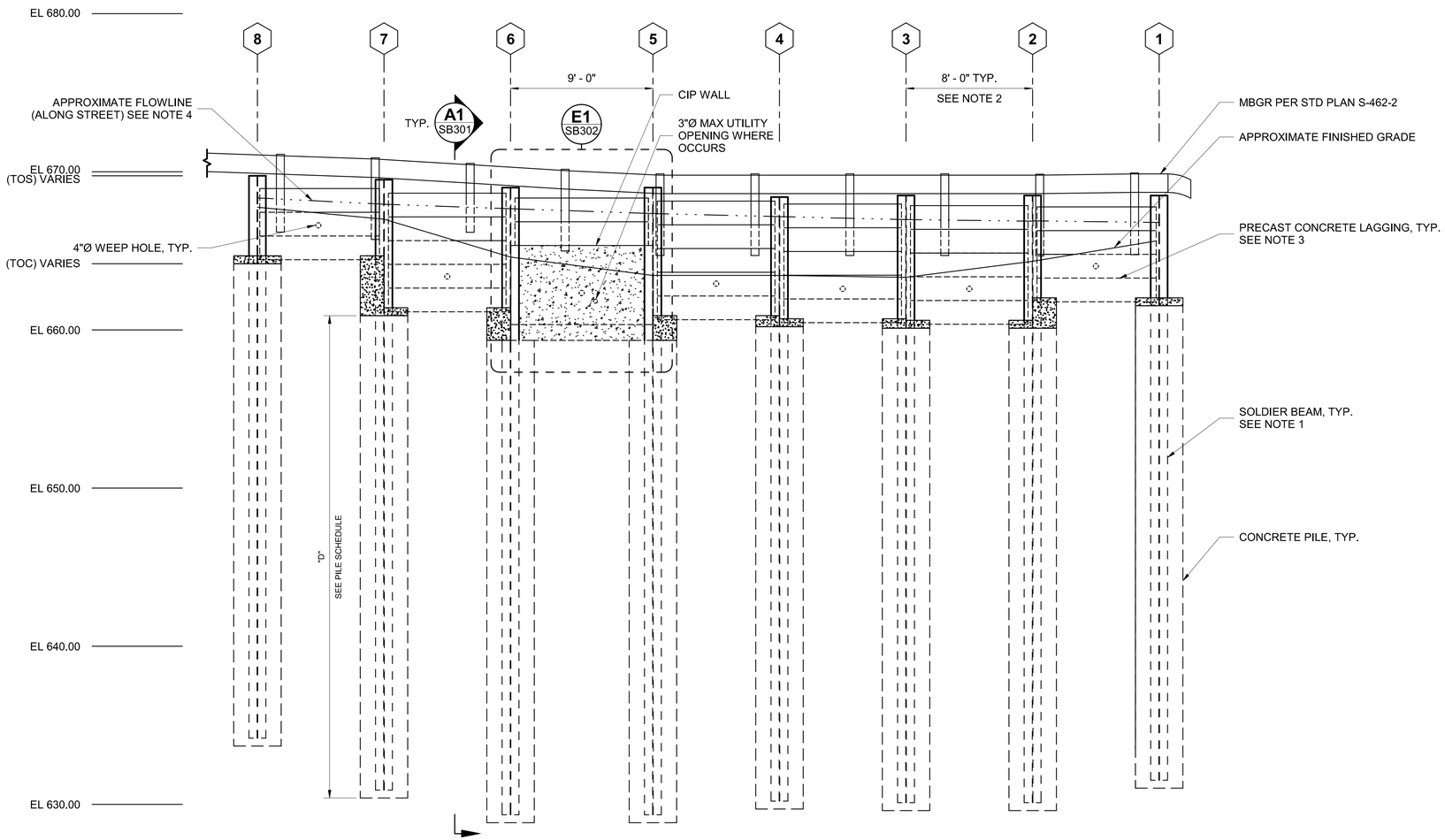
ALFRED MATA, P.E.
INTERIM CITY ENGINEER — DATE 12/16/2025

DESIGN GROUP			
ENGINEER:	JIN CHAE, P.E.	LIC. NO.: C90554	12/16/2025
DESIGNED BY:	JIN CHAE, P.E.		12/16/2025
DRAWN BY:	JIN CHAE, P.E.		12/16/2025
CHECKED BY:	MELVIN AGAGAS, S.E.	MARIAM YOUSSEF, P.E.	12/16/2025
APPROVED BY:	SHAILESH "SUNNY" PATEL		12/16/2025

WORK ORDER
E1909302

SHEET NAME
SB101

SHEET 10 OF 13 SHEETS



ELEVATION - LOOKING SOUTHEAST

SCALE: 1/4" = 1'-0"

NOTES:

1. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES WITHIN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IN WRITING OF ANY INTERFERENCE AND REQUEST INSTRUCTIONS.
2. SEE PILE SCHEDULE FOR PILE INFORMATION.
3. SEE DETAIL E9/SB301 FOR PRECAST CONCRETE LAGGING INFORMATION.
4. APPROXIMATE LOCATION OF FLOWLINE. FLOWLINE ELEVATIONS PROVIDED BY OTHERS. SEE KEY NOTE 4 ON SB101.

DESIGN DATA:

ACI 318-19
AISC 360-16

SOIL DESIGN PARAMETERS:

PER SOILS REPORTS GED FILE NO. 23-058 DATED: FEBRUARY 19, JUNE 2, AND NOVEMBER 25, 2025.

DEISGN LATERAL ACTIVE PRESSURE
1. EQUIVALENT FLUID PRESSURE (GROUND SURFACE TO 25 FT BGS) ..... 40 PCF
2. EQUIVALENT FLUID PRESSURE (25 FT BGS AND BELOW) ..... 25 PCF
3. LIVE LOAD SURCHARGE (UPPER 10 FT) ..... 100 PSF
4. SEISMIC LOAD INVERTED FLUID PRESSURE ..... 25 PCF
(FOR WALL HEIGHT GREATER THAN 6'-0")

ALLOWABLE LATERAL PASSIVE PRESSURE
1. 10 FT BELOW GROUND SURFACE (BGS) TO 25 FT BGS ..... 100 PSF/FT
2. 25 FT BGS AND BELOW ..... 300 PSF/FT, 3,000 PSF MAX

REINFORCED CONCRETE DESIGN:

CONCRETE PILE ENCASEMENT ..... f'_c = 3,250 PSI (565-C-3250P)
PRECAST CONCRETE LAGGING PANEL ..... f'_c = 4,000 PSI (650-CW-4000)
CAST-IN-PLACE WALL ..... f'_c = 4,000 PSI (650-CW-4000)
STEEL REINFORCEMENT ..... f'_y = 60 KSI (ASTM A615 OR ASTM 706)

PILE SCHEDULE

PILE #	CONCRETE PILE DIAMETER	D EMBEDMENT DEPTH (FT)	TOP OF CONC (TOC) PILE ELEVATION	TOP OF STEEL (TOS) PILE ELEVATION	FLOWLINE ELEVATION	STEEL PILE SIZE	STATION LOCATION (FT)	BEARING[c]	DIST. MEASURED FROM C OF ROAD (R:RIGHT, L:LEFT)[a,b]	TOTAL # OF LAGGING PANELS	LAGGING LENGTH (FT)
1	36"	30.5	661.75	668.50	666.80	W24x104	01+85.47	N62°40'18"W	13.79 R		
2	36"	30.5	660.25	668.50	666.88	W24x104	01+77.49	N62°31'59"W	14.33 R	4	7' - 9"
3	36"	30.5	660.25	668.50	666.98	W24x104	01+69.50	N57°14'33"W	14.00 R	5	7' - 9"
4	36"	30.5	660.25	668.50	667.17	W24x104	01+61.66	N49°12'11"W	12.37 R	5	7' - 9"
5	36"	30.5	659.25	669.00	667.36	W24x104	01+54.20	N36°23'03"W	9.50 R	5	7' - 9"
6	36"	30.5	659.25	669.00	667.67	W24x104	01+46.48	N26°27'46"W	4.88 R	2	8' - 9"
7	36"	30.5	661.25	669.50	667.95	W24x104	01+40.48	N15°27'05"W	0.36 L	5	7' - 9"
8	36"	30.5	665.25	669.75	668.35	W24x104	01+35.31	N10°42'11"W	6.50 L	3	7' - 9"

a. DISTANCE MEASURED: CENTER OF CONCRETE PILE/STEEL BEAM PERPENDICULAR TO CENTER LINE OF ROADWAY.
b. SEE GENERAL PLAN SHEET SB101 FOR INDICATION L/R DIRECTION FROM C/L OF ROADWAY BASED ON INCREASING STATIONING.
c. BEARING IS APPROXIMATE. FIELD ADJUSTMENT MAY BE REQUIRED.

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REVISION DATES
(DESIGN STAFF ONLY)

ENGINEERING
CITY OF LOS ANGELES
SED
STRUCTURAL ENGINEERING DIVISION

REGISTERED PROFESSIONAL ENGINEER
JIN CHAE
C 90554
CIVIL
STATE OF CALIFORNIA

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

BUREAU OF ENGINEERING

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BULKHEAD & PILE ELEVATION
PROJECT: AVON STREET (1923) BULKHEAD
ADDRESS: 1923 AVON STREET, LOS ANGELES, CA 90026

NO.	REVISION DESCRIPTION	DATE	BY

CIP NO. M1225

INDEX NO.

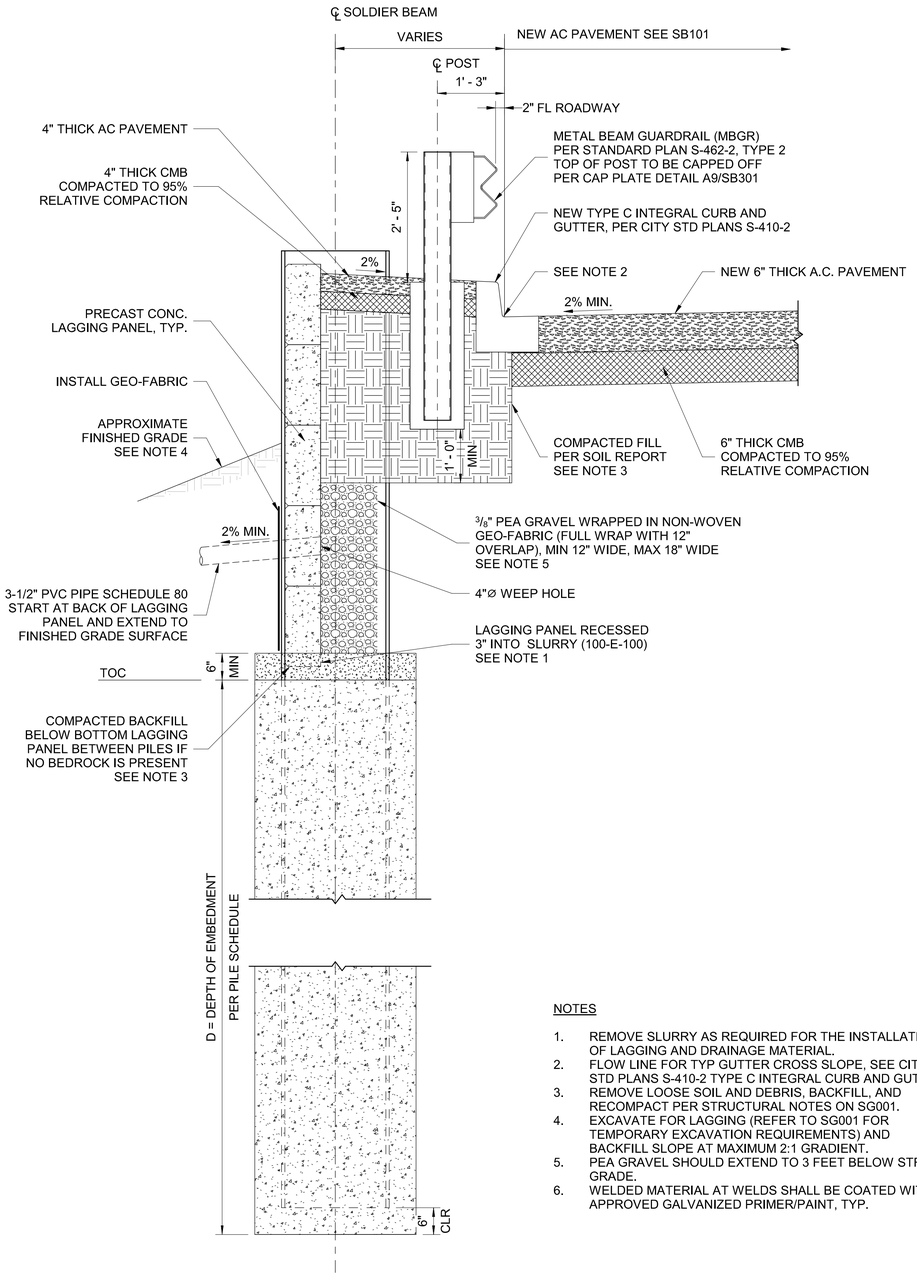
CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

	INTERIM CITY ENGINEER	DATE
ALFRED MATA, P.E.		
DESIGN GROUP		
ENGINEER:	JIN CHAE, P.E. LIC. NO.: C90554	12/16/2025
DESIGNED BY:	JIN CHAE, P.E.	12/16/2025
DRAWN BY:	JIN CHAE, P.E.	12/16/2025
CHECKED BY:	MELVIN AGAGAS, S.E. / MARIAM YOUSSEF, P.E.	12/16/2025
APPROVED BY:	SHAILESH "SUNNY" PATEL	12/16/2025

WORK ORDER
E1909302

SHEET NAME
SB201

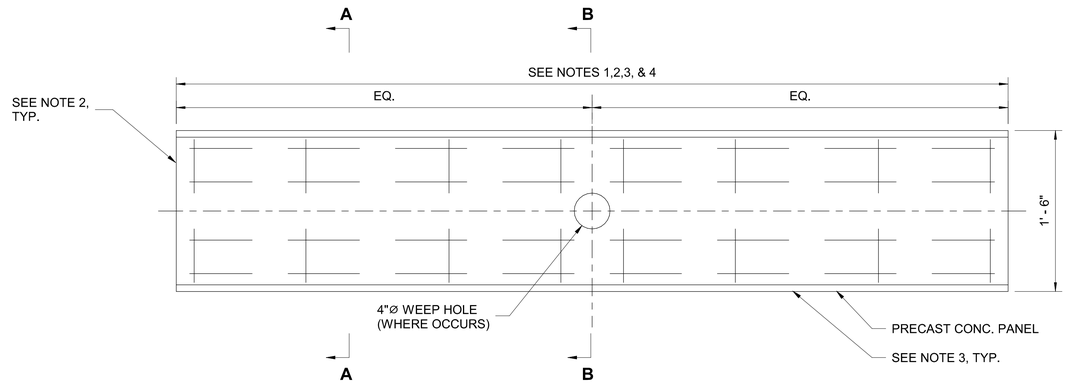
SHEET 11 OF 13 SHEETS



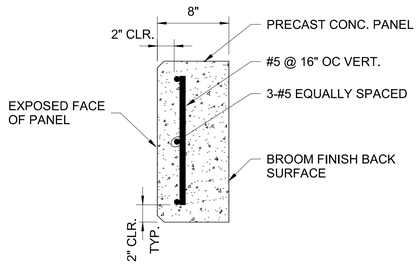
NOTES

1. REMOVE SLURRY AS REQUIRED FOR THE INSTALLATION OF LAGGING AND DRAINAGE MATERIAL.
2. FLOW LINE FOR TYP GUTTER CROSS SLOPE, SEE CITY STD PLANS S-410-2 TYPE C INTEGRAL CURB AND GUTTER.
3. REMOVE LOOSE SOIL AND DEBRIS, BACKFILL, AND RECOMPACT PER STRUCTURAL NOTES ON SG001.
4. EXCAVATE FOR LAGGING (REFER TO SG001 FOR TEMPORARY EXCAVATION REQUIREMENTS) AND BACKFILL SLOPE AT MAXIMUM 2:1 GRADIENT.
5. PEA GRAVEL SHOULD EXTEND TO 3 FEET BELOW STREET GRADE.
6. WELDED MATERIAL AT WELDS SHALL BE COATED WITH APPROVED GALVANIZED PRIMER/PAINT, TYP.

A1	TYPICAL BULKHEAD CROSS SECTION
NOT TO SCALE	1/ SB101

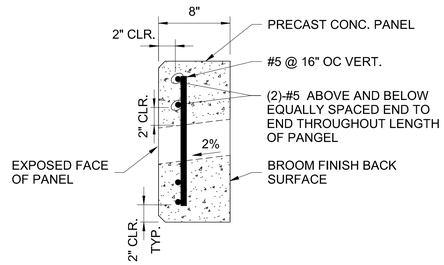


LAGGING PANEL



LAGGING PANEL WITHOUT WEEP HOLE

SECTION A - A



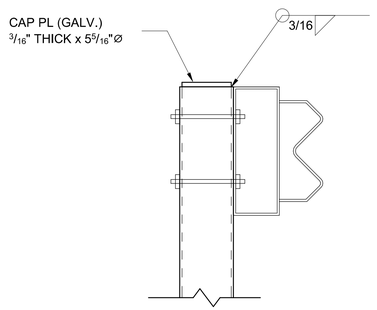
LAGGING PANEL WITH WEEP HOLE

SECTION B - B

NOTES:

1. LAGGING PANELS LENGTH BETWEEN PILE NO. 5 & 6 SHALL BE 8'-9", ALL OTHERS LAGGING PANELS LENGTH SHALL BE 7'-9"
2. EDGES OF VERTICAL SURFACE OF CONCRETE LAGGING PANEL SHALL NOT BE CHAMFERED.
3. EXPOSED HORIZONTAL EDGES OF CONCRETE LAGGING PANEL SHALL BE CHAMFERED 3/4".
4. FIELD VERIFY SPACING OF SOLDIER BEAM TO PROVIDE ADEQUATE LENGTH FOR MIN 3" BEARING EACH END OF BEAM FLANGE. (SEE DETAIL A12/SB301)

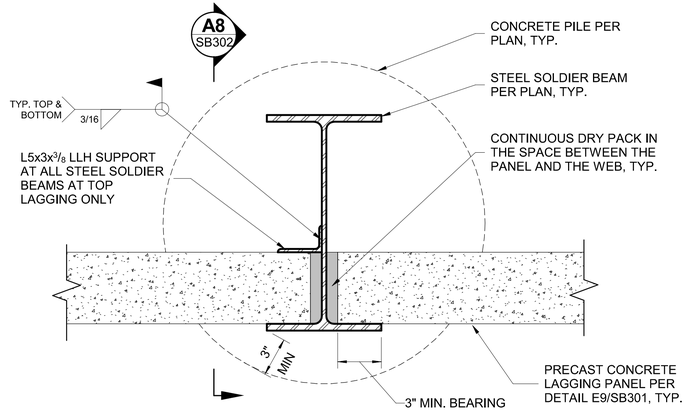
E9	TYPICAL PRECAST LAGGING PANELS
NOT TO SCALE	



NOTE:

WELDED MATERIAL AT WELDS SHALL BE COATED WITH APPROVED GALVANIZED PRIMER/PAINT, TYP.

A9	CAP PLATE DETAIL
NOT TO SCALE	



PLAN AT TOP OF STEEL BEAM

A12	LAGGING PANELS TO SOLDIER PILE CONN.
NOT TO SCALE	A1/ SB302

REVISION DATES (DESIGN STAGE ONLY)

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ENGINEERING
CITY OF LOS ANGELES

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

BUREAU OF ENGINEERING
CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BULKHEAD SECTION AND DETAILS No. 1

PROJECT: AVON STREET (1923) BULKHEAD

ADDRESS: 1923 AVON STREET, LOS ANGELES, CA 90026

NO.	REVISION DESCRIPTION	DATE	BY

CIP NO. M1225

INDEX NO.

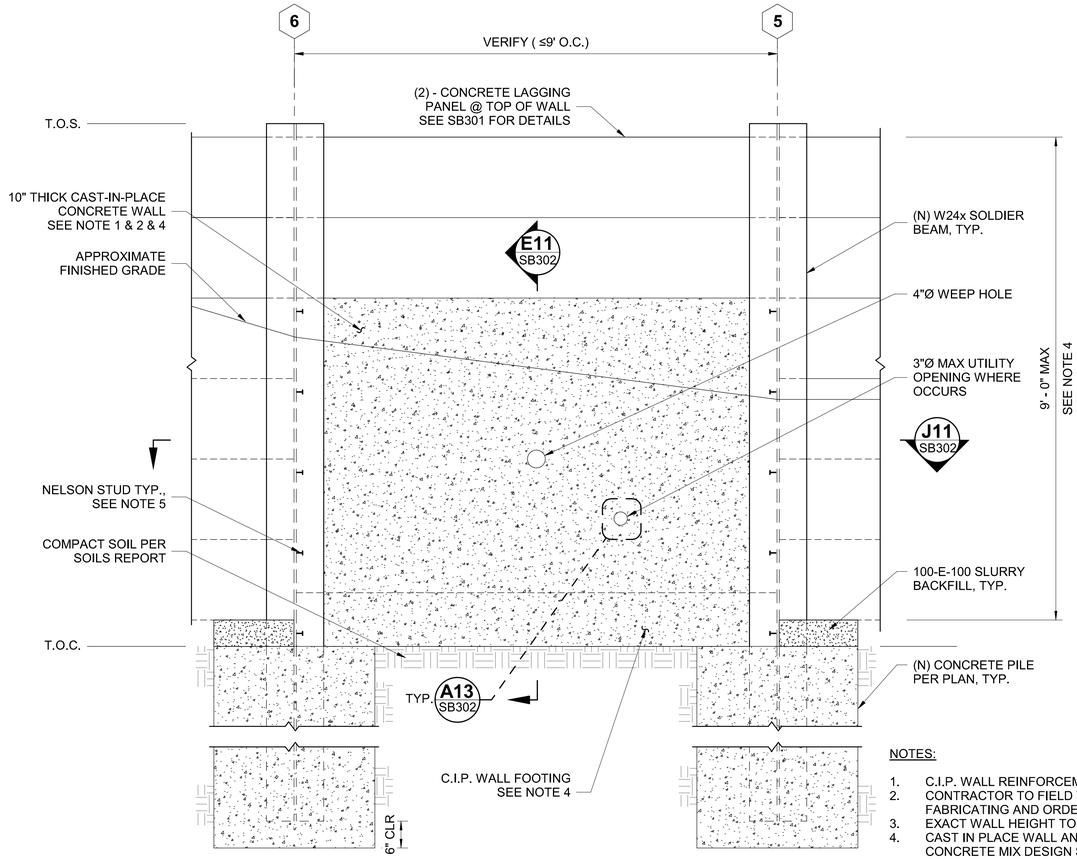
ALFRED MATA, P.E.
INTERIM CITY ENGINEER

DESIGN GROUP	LIC. NO.	DATE
ENGINEER: JIN CHAE, P.E.	C90554	12/16/2025
DESIGNED BY: JIN CHAE, P.E.		12/16/2025
DRAWN BY: JIN CHAE, P.E.		12/16/2025
CHECKED BY: MELVIN AGAGAS, S.E.		12/16/2025
APPROVED BY: SHAILESH "SUNNY" PATEL, S.E.		12/16/2025

WORK ORDER
E1909302

SHEET NAME
SB301

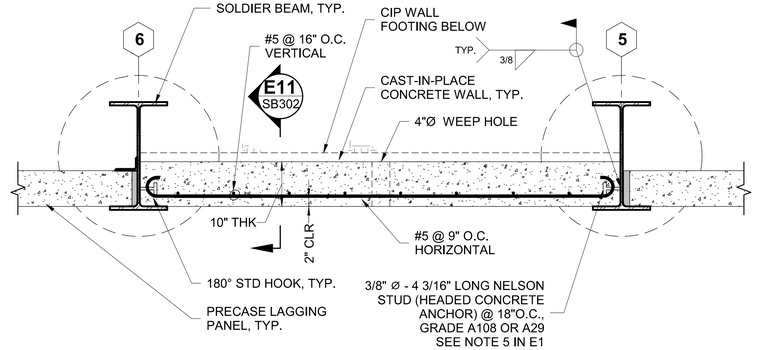
SHEET 12 OF 13 SHEETS



NOTES:

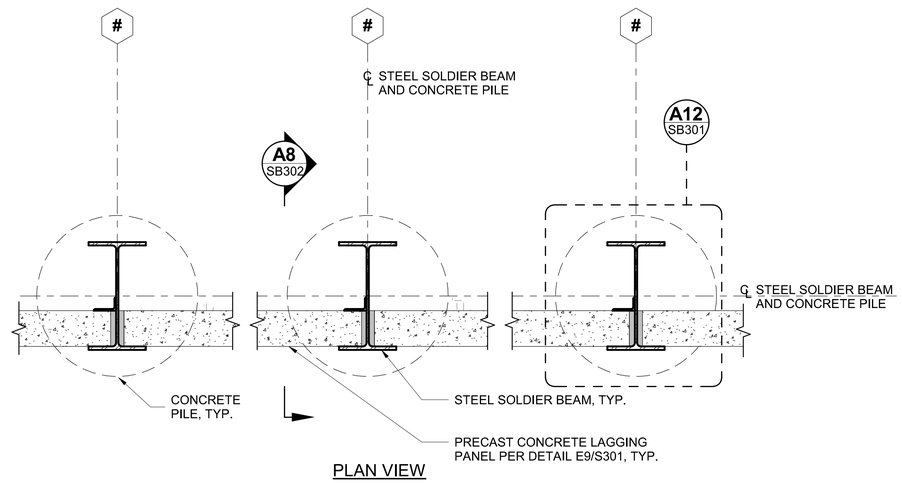
1. C.I.P. WALL REINFORCEMENT NOT SHOWN FOR CLARITY, SEE DETAIL J11.
2. CONTRACTOR TO FIELD VERIFY EXACT CIP WALL HEIGHT. PRIOR TO FABRICATING AND ORDERING MATERIALS.
3. EXACT WALL HEIGHT TO BE FIELD VERIFIED.
4. CAST IN PLACE WALL AND FOOTING SHALL BE CLASS MIX 660-CW-4000P. CONCRETE MIX DESIGN SHALL BE SUBMITTED FOR REVIEW.
5. REMOVE PAINT AND CLEAN BEAM SURFACE PRIOR TO WELDING NELSON STUD ANCHORS TO THE WEB. AFTER WELDING, ALL WELDED AREAS SHALL BE COATED WITH APPROVED GALVANIZED PRIMER/PAINT.

E1	CAST IN PLACE WALL PANEL ELEVATION VIEW
NOT TO SCALE	1/ SB201



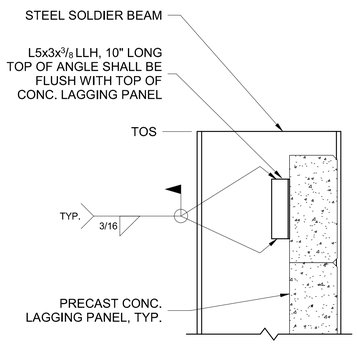
J11	CAST-IN-PLACE WALL DETAILS
NOT TO SCALE	1/ SB101

E11	CAST-IN-PLACE WALL AND FOOTING DETAILS
NOT TO SCALE	E1/ SB302

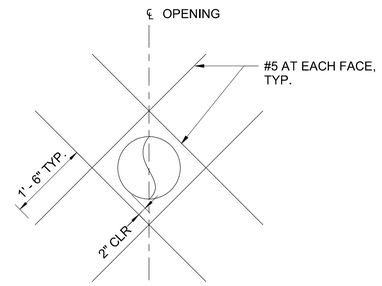


PLAN VIEW

A1	TYPICAL SOLDIER BEAM / LAGGING LAYOUT
NOT TO SCALE	1/ SB101



A8	TYPICAL SOLDIER BEAM / LAGGING SECTION
NOT TO SCALE	A12/ SB301



A13	REINF. AROUND OPENING
NOT TO SCALE	E1/ SB302

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REVISION DATES (DESIGN STAGE ONLY)

ENGINEERING
CITY OF LOS ANGELES
SED
STRUCTURAL ENGINEERING DIVISION

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

PROFESSIONAL ENGINEER * REGISTERED * C 90554 * CIVIL * STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BULKHEAD SECTION AND DETAILS No. 2

PROJECT: AVON STREET (1923) BULKHEAD

ADDRESS: 1923 AVON STREET, LOS ANGELES, CA 90026

NO.	REVISION DESCRIPTION	DATE	BY

CIP NO. M1225

INDEX NO.

DESIGN GROUP		LIC. NO.	DATE
INTERIM CITY ENGINEER	ALFRED MATA, P.E.		12/16/2025
ENGINEER:	JIN CHAE, P.E.	C90554	12/16/2025
DESIGNED BY:	JIN CHAE, P.E.		12/16/2025
DRAWN BY:	JIN CHAE, P.E.		12/16/2025
CHECKED BY:	MELVIN AGAGAS, S.E. / MARIAM YOUSSEF, P.E.		12/16/2025
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.		12/16/2025

WORK ORDER E1909302

SHEET NAME SB302

SHEET 13 OF 13 SHEETS