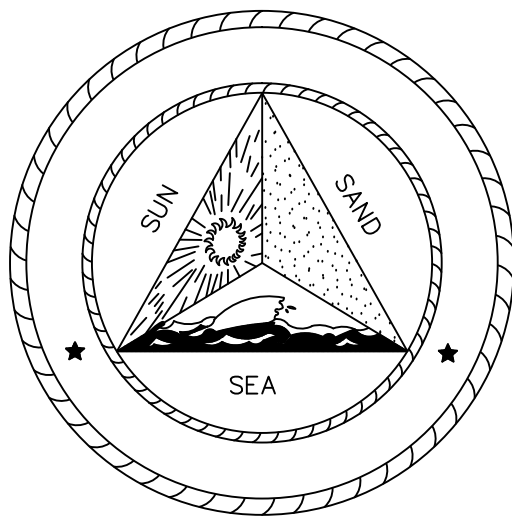


CITY OF MANHATTAN BEACH

PLANS FOR

PIER BOLLARD PROJECT

PLAN NO. D-918



PUBLIC WORKS DEPARTMENT

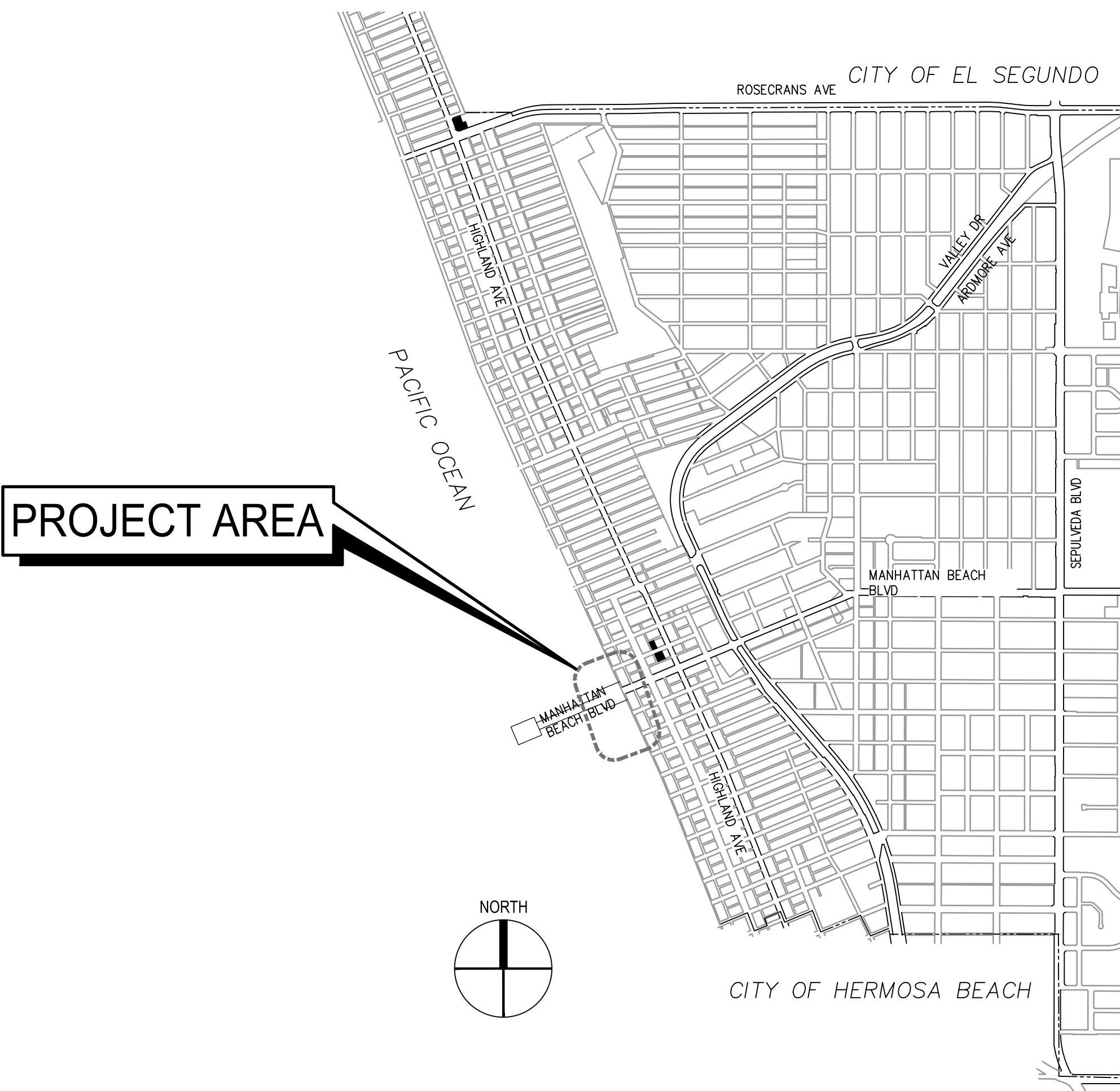
1400 HIGHLAND AVENUE

MANHATTAN BEACH, CALIFORNIA 90266

Telephone (310)545-5621, ext. 378

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" LATEST EDITION, AND ALL APPLICABLE STANDARDS AND SPECIFICATIONS TO THE SATISFACTION OF THE ENGINEER.
2. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A.) AS REQUIRED PRIOR TO THE START OF WORK. UPON EXPOSING ANY UTILITY'S UNDERGROUND FACILITY THE CONTRACTOR SHALL NOTIFY THAT UTILITY IMMEDIATELY.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL SUBSTRUCTURES WITHIN THE ALIGNMENT OF THE PROPOSED IMPROVEMENTS, AND IN THE EVENT OF SUBSTRUCTURE DAMAGE, HE SHALL BEAR THE TOTAL COST OF REPAIR OR REPLACEMENT.
4. THE CONTRACTOR SHALL NOT CONDUCT ANY OPERATIONS OR PERFORM ANY WORK PERTAINING TO THE PROJECT BETWEEN 5:00 P.M. AND 7:30 A.M. ON ANY DAY NOR ON SATURDAY, SUNDAY, HOLIDAY AT ANY TIME EXCEPT AS APPROVED BY THE ENGINEER.
5. TREES, FOLIAGE, SIGNS, PARKING METERS, AND OTHER IMPROVEMENTS SHALL BE PROTECTED IN PLACE AND ANY DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPLACED IN KIND.
6. THE CONTRACTOR IS ADVISED THAT ALL EXCAVATED MATERIALS SHALL BECOME HIS PROPERTY AND SHALL BE REMOVED FROM THE JOB SITE UNLESS INSTRUCTED BY THE ENGINEER TO DO OTHERWISE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE DURING ALL PHASES OF THE WORK TO PROVIDE FOR PUBLIC SAFETY AND CONVENIENCE. THE CONTRACTOR SHALL ESTABLISH ADEQUATE ACCESS TO DRIVEWAYS AT THE END OF EACH WORKING DAY TO THE SATISFACTION OF THE ENGINEER.
8. THE CONTRACTOR SHALL ADJUST MANHOLES AND VALVE COVERS TO FINISHED GRADE.
9. THE CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN FOR THE COMPLETION OF THE PROPOSED IMPROVEMENTS PER THE "WORK AREA TRAFFIC CONTROL HANDBOOK" (W.A.T.C.H.) TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR WILL BE ALLOWED TO CLOSE STREETS WITHIN THE PROJECT AREA TO TRAFFIC FROM 8:00 A.M. TO 4:30 P.M., EXCEPT THAT NO TWO ADJACENT STREETS SHALL BE CLOSED AT ANY ONE TIME.
10. THE CONTRACTOR SHALL PROVIDE A 72-HOUR NOTIFICATION TO THE AFFECTED PROPERTIES, POLICE DEPARTMENT, AND FIRE DEPARTMENT IN THE EVENT OF A CHANGE IN STREET CLOSURE TO TRAFFIC AND/OR PUBLIC SAFETY VEHICLES, PARKING RESTRICTION, AND ON EACH MONDAY MORNING DURING THE CONSTRUCTION PERIOD.
11. COLD PLANING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER TO ALLOW A MINIMUM A.C. PAVEMENT OF 1-1/2 INCHES, 1-1/4 INCH HIKE UP TO EXISTING DRIVEWAYS, AND 1-1/2 INCH CUT AT GUTTER EDGE PER DETAIL.
12. AS REQUIRED BY THE ENGINEER, THE CONTRACTOR SHALL FURNISH AND OPERATE A SELF-LOADING MOTOR SWEEPER WITH SPRAY NOZZLES AT LEAST TWICE EACH WORKING DAY TO KEEP PAVED AREAS ACCEPTABLY CLEAN WHEREVER CONSTRUCTION, INCLUDING RESTORATION, IS INCOMPLETE.
13. ALL PORTLAND CEMENT CONCRETE (P.C.C.) AND ASPHALTIC CONCRETE (A.C.) SHALL BE REMOVED TO A SAWCUT.



CITY OF MANHATTAN BEACH

PUBLIC WORKS DEPARTMENT – ENGINEERING DIVISION

PIER BOLLARD PROJECT

1 MANHATTAN BEACH BLVD., MANHATTAN BEACH, CA 90266

VICINITY MAP, PARTIAL PIER PLAN & DETAILS

RECOMMENDED BY:

CITY ENGINEER _____ DATE _____

DIRECTOR OF PUBLIC WORKS _____ DATE _____

REVIEWED BY:

PREM KUMAR _____ DATE _____

STRUCTURAL BY:

IDS GROUP, INC. _____ DATE _____

SCALE:

AS SHOWN

DATE:

—

DRAWING NO.

—

SHEET

OF

T100



IDS Project No. 165023.00

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

REVIEWED BY	DATE

REFERENCES

GENERAL NOTES

GENERAL

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2013 CALIFORNIA BUILDING CODE (CBC) WITH AMENDMENTS.
2. GOVERNING CODE AUTHORITY: CITY OF MANHATTAN BEACH DEPARTMENT OF BUILDING AND SAFETY
3. THESE DRAWINGS AND REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SHOWN THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT ARE NOT LIMITED TO BRACING, SHORING OF LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
4. GENERAL NOTES AND TYPICAL DETAILS APPLY TO THE DRAWINGS UNLESS OTHERWISE NOTED. SPECIFIC NOTES AND DETAILS ON THE DRAWINGS TAKE PRECEDENCE OVER THESE GENERAL NOTES AND TYPICAL DETAILS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA DURING CONSTRUCTION PERIOD. THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTY AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES.
6. ALL INFORMATION, DIMENSIONS, AND ELEVATIONS SHOWN OR NOTED FOR THE EXISTING STRUCTURE ARE BASED ON THE BEST INFORMATION CURRENTLY AVAILABLE AT THE TIME OF THE PREPARATION OF THESE DRAWINGS. NO WARRANTY IS IMPLIED AS TO THE ACCURACY OF EXISTING CONDITIONS. THE CONTRACTOR SHALL REFER TO THE ORIGINAL CONSTRUCTION DOCUMENTS (IF ANY) FOR INFORMATION REGARDING EXISTING CONSTRUCTION AND SHALL FIELD VERIFY ALL CONDITIONS. IF CONDITIONS BECOME APPARENT WHICH DIFFER FROM THE CONDITIONS SHOWN HEREIN, THEY SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. DIMENSIONS TAKE PRECEDENCE OVER SCALE OF DRAWING. HOWEVER, ANY SIGNIFICANT CONFLICTS SHALL BE RESOLVED AS NOTED.
7. THE CONTRACTOR SHALL, SUPERVISE, DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. THE SUPPORT SERVICES BY THE ENGINEER, WHETHER PERFORMED PRIOR TO, DURING, OR AFTER CONSTRUCTION, ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS; BUT THEY DO NOT GUARANTEE THE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSIDERED AS SUPERVISION OF CONSTRUCTION.
8. THE CONTRACTOR SHALL SUBMIT THE CONSTRUCTION SCHEDULE, SEQUENCES AND METHODS TO THE ENGINEER AND THE CITY OF MANHATTAN BEACH BUILDING INSPECTOR FOR REVIEW PRIOR TO CONSTRUCTION.
9. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. THE MINIMUM REVIEW TIME AFTER RECEIVING THE SUBMITTALS IS 10 WORKING DAYS BEFORE RETURN TO THE CONTRACTOR. SHOP DRAWINGS WILL BE REJECTED FOR INCOMPLETENESS, LACK OF CALCULATIONS (IF REQUIRED) OR CHANGES WITHOUT PRE-APPROVAL. ALL STRUCTURAL CALCULATIONS AND DRAWINGS AS PART OF THE SHOP DRAWINGS SUBMITTAL SHALL BE SIGNED AND STAMPED BY A CALIFORNIA REGISTERED ENGINEER.
10. ANY PARTS OF WORK AREA WHICH ARE TO BE BARRICADED OR SEALED TO NON-CONSTRUCTION INDIVIDUALS MUST BE COORDINATED WITH AND APPROVED BY OWNER BEFORE PROCEEDING WITH THE WORK.
11. THE CONTRACTOR SHALL EXERT EVERY EFFORT TO PREVENT DUST AND CONSTRUCTION DEBRIS FROM CONTAMINATING THE WORK AREA AND ADJACENT PUBLIC AREAS. THESE EFFORTS SHALL INCLUDE BUT NOT BE LIMITED TO PROVIDING A DAILY CLEANUP OF THE CONSTRUCTION AREA AND PROVIDE PLASTIC SHEETING OVER EXISTING EQUIPMENT IF ANY. THE CONTRACTOR SHALL REFER TO THE PROJECT DETAILED SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE TO SECURE THE CONSTRUCTION SITE.
13. CUTTING, BORING, SAW-CUTTING OR DRILLING THROUGH THE EXISTING STRUCTURE IS NOT TO BE STARTED UNTIL DETAILS HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER OF RECORD AND INSPECTOR, IF THE DETAILS DO NOT CONFORM TO THE APPROVED DRAWINGS.
14. CONTRACTOR SHALL SUBMIT SHORING METHODS, CONSTRUCTION SCHEDULE. NOISE AND DUST CONTROL METHOD. TRAFFIC CONTROL PLAN, ETC. TO ENGINEER OF RECORD FOR REVIEW PRIOR TO COMMENCEMENT OF WORK.
15. FIELD SUBSTITUTION OF MATERIALS AND FASTENERS IS NOT ALLOWED WITHOUT REVIEW BY ENGINEER OF RECORD.

DEMOLITION

1. THE CONTRACTOR SHALL REMOVE ALL INTERFERING ITEMS FOR NEW CONSTRUCTION. AFTER COMPLETION OF SPECIFIED WORK, THE CONTRACTOR SHALL REPAIR OR REPLACE ALL REMOVED ITEMS TO MATCH THE EXISTING CONDITIONS.
2. ALL EXISTING PIPING, WIRING, ETC. SHALL BE MAINTAINED UNDAMAGED IN PLACE WITH NECESSARY MODIFICATIONS TO ACCOMMODATE THE NEW CONSTRUCTION.
3. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED ELEMENTS MEMBERS CAUSED BY CONSTRUCTION WHEN REQUIRED BY THE INSPECTOR OR THE ENGINEER.
4. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACING DURING CONSTRUCTION. THE SHORING AND BRACING METHODS SHALL BE DESIGNED BY A CIVIL OR STRUCTURAL CALIFORNIA REGISTERED ENGINEER.

TOLERANCE

1. PERMITTED TOLERANCE SHALL BE ACCORDING 2013 CALIFORNIA BUILDING CODE WITH AMENDMENTS.

SOILS AND FOUNDATIONS

1. ALLOWABLE FOUNDATION AND LATERAL PRESSURES ARE BASED ON THE PRESUMPTIVE ALLOWABLE VALUES FROM THE CBC TABLE 1804.2. SOIL CLASS 4, SAND.
2. FOUNDATION DESIGN IS BASED ON THE REQUIREMENTS OF CBC, SECTION 1806.2.
3. ALL FOUNDATION EXCAVATION WORK AND SOIL COMPACTION SHALL BE INSPECTED AND APPROVED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF ANY REINFORCING STEEL OR CONCRETE. ALL FOOTINGS AND SLABS ON GRADE SHALL BEAR ON SUBGRADE COMPACTED TO A MINIMUM OF 90% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557.
4. ALLOWABLE FOUNDATION BEARING PRESSURES = 2000 PSF
5. LATERAL BEARING PRESSURE = 100 PSF/FT WITH INCREASES AS PERMITTED BY TABLE 1806.2
6. LATERAL SLIDING RESISTANCE = 150 PSF.
7. COEFFICIENT OF FRICTION = 0.25
8. MINIMUM DEPTH OF FOOTINGS = 12 INCHES.
9. MINIMUM FOOTING WIDTH = 12 INCHES.
10. FOOTINGS SHALL BE PLACED AND ESTIMATED ACCORDING TO DEPTHS SHOWN ON DRAWINGS. SHOULD SOIL ENCOUNTERED AT DEPTHS SHOWN ON DRAWINGS NOT BE APPROVED BY THE IOR, FOOTING DEPTHS WILL BE ALTERED AS REQUIRED.

STRUCTURAL TESTS AND INSPECTIONS

- STRUCTURAL TESTS AND INSPECTIONS:
1. THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION DURING CONSTRUCTION. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
2. ALL INSPECTIONS SHALL BE PERFORMED BY INDEPENDENT SPECIAL INSPECTORS. JOB SITE VISITS BY THE STRUCTURAL ENGINEER OR BUILDING OFFICIAL DO NOT CONSTITUTE AND ARE NOT A SUBSTITUTE FOR INSPECTIONS BY A SPECIAL INSPECTOR.
3. ALL INSPECTION REPORTS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND EOR. THE FINAL REPORTS BY THE SPECIAL INSPECTOR(S) MUST CERTIFY THAT THE ENTIRE STRUCTURAL SYSTEM COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.
4. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT THESE INSPECTIONS ARE PERFORMED.
5. STRUCTURAL TESTS AND INSPECTIONS SHALL BE ACCORDANCE WITH CBC CHAPTER 17. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION INCLUDED IN THE APPROVED ICC CODE EVALUATION REPORT FOR SPECIFIED PRODUCTS SHALL BE FOLLOWED WHERE APPLICABLE.
6. INSPECTION: WORK ITEMS REQUIRING THE PRESENCE AND INSPECTION BY THE PROJECT OR SPECIAL INSPECTOR INCLUDE, BUT MAY NOT BE LIMITED TO, THE ITEMS LISTED BELOW.

A. STEEL: MEMBER LOCATIONS.

B. CONCRETE REINFORCING PLACEMENT.

C. CONCRETE: USE OF REQUIRED DESIGN MIX, SAMPLING OF FRESH CONCRETE, CONCRETE PLACEMENT, CURING, FORMWORK/DECKING.
7. TESTS: WORK ITEMS REQUIRING TESTING INCLUDE, BUT MAY NOT BE LIMITED TO THE FOLLOWING:

A. CONCRETE: COMPRESSIVE STRENGTH, SLUMP, AIR CONTENT, TEMPERATURE

CAST-IN-PLACE CONCRETE

1. CONCRETE SHALL BE MIXED, PLACED AND CURED IN ACCORDANCE WITH ACI 318, LATEST EDITION, AND PROJECT SPECIFICATIONS.
2. PORTLAND CEMENT SHALL BE TYPE II UNLESS OTHERWISE NOTED. CONCRETE TO MEET DURABILITY REQUIREMENTS PER ACI 318 FOR EXPOSURE CATEGORY C2.
3. FLY ASH OR OTHER POZZOLANS CONFORMING TO ASTM C618 CLASS N OR F MAY BE USED AS A PARTIAL SUBSTITUTION FOR PORTLAND CEMENT UP TO A MAXIMUM OF 25% TOTAL CEMENTITIOUS MATERIALS BY WEIGHT IF THE MIX DESIGN IS PROPORTIONED BY METHOD B OR C.
4. ALL CONCRETE SHALL BE NORMAL WEIGHT (145 PCF) HARD ROCK TYPE UNLESS OTHERWISE NOTED AS LIGHTWEIGHT CONCRETE (115 PCF MAX.).
5. AGGREGATES IN NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C-33 (HARDROCK).
6. CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C94.
7. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) AT 28 DAYS AS FOLLOWS, UNLESS OTHERWISE NOTED:

A. FOUNDATION, FOOTINGS: 5,000 PSI

B. OTHER CONC.: 5,000 PSI
8. COMPRESSIVE STRENGTH TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER.
9. CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY, BEARING A REGISTERED CIVIL ENGINEER'S STAMP, AND REVIEWED BY THE ENGINEER PRIOR TO USE.
10. MAXIMUM RATIO OF WATER TO CEMENTITIOUS MATERIALS, BY WEIGHT, SHALL BE 0.40 UNLESS OTHERWISE NOTED. MAXIMUM WATER-SOLUBLE CHLORIDE ION CONTENT BY WEIGHT OF CEMENT = 0.15.
11. CONCRETE COVERAGE OF REINFORCING STEEL SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

B. CONCRETE EXPOSED TO EARTH OR WEATHER:

* #6 THROUGH #18 REBAR: 2"

* #5 REBAR, W31 OR D31 WIRE, AND SMALLER: 2"

C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:

* SLABS, WALLS AND JOISTS (#11 REBAR AND SMALLER): 2"

* BEAMS AND COLUMNS: 2½"

D. SLABS-ON-GRADE:

TOP REINF.: 2" U.N.O.

BOTTOM REINF.: 3" U.N.O.
12. ALL EXPOSED CONCRETE EDGES SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE NOTED.
13. ALL NEW CONCRETE PLACED AGAINST HARDENED CONCRETE SHALL BE PREPARED PER THE FOLLOWING PROCEDURE:

A. ROUGHEN HARDENED SURFACE TO AN AMPLITUDE OF 1/4" WITH BUSH HAMMER, SAND BLASTING, OR OTHER APPROVED METHOD.

B. CLEAN SURFACES OF DUST AND DEBRIS USING CLEAN COMPRESSED AIR AND WATER.

C. SURFACE SHALL BE WETTED AND STANDING WATER REMOVED.

D. REFER TO OTHER NOTES FOR DUST CONTROL DURING CONSTRUCTION.
15. CURING COMPOUND USED ON CONCRETE SHALL BE REVIEWED BY THE ENGINEER.
16. THE NOMINAL MAXIMUM SIZE OF COARSE AGGREGATES SHALL BE 1" UNLESS OTHERWISE NOTED.

STRUCTURAL OBSERVATION PROGRAM

1. STRUCTURAL OBSERVATION SHALL BE CONDUCTED BY A STRUCTURAL ENGINEER FROM IDS GROUP INC. THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO ENGINEER PRIOR TO REQUIRED VISIT.
2. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE INSPECTIONS REQUIRED BY SECTIONS 108, 1701 OR OTHER SECTIONS OF THE CODE.
3. ALL OBSERVED DEFICIENCIES SHALL BE REPORTED IN WRITING TO THE OWNER'S REPRESENTATIVE, SPECIAL INSPECTOR, CONTRACTOR & INSPECTION SERVICES. THE STRUCTURAL OBSERVER SHALL SUBMIT A WRITTEN STATEMENT TO INSPECTION SERVICES THAT SITE VISITS HAVE BEEN MADE AND IDENTIFYING ANY REPORTED DEFICIENCIES THAT HAVE NOT BEEN RESOLVED. THE STRUCTURE WILL NOT BE IN COMPLIANCE UNTIL THE DESIGNER HAS NOTIFIED INSPECTION SERVICES THAT ALL DEFICIENCIES ARE RESOLVED. STRUCTURAL OBSERVATION REPORTS SHALL BE FILED WITH THE CITY OF MANHATTAN BEACH BUILDING OFFICIAL.
4. STRUCTURAL OBSERVATION SHALL BE CONDUCTED AT SUBSTANTIAL COMPLETION OF THE FOLLOWING STAGES OF WORK.


- LAYOUT OF CAISSONS PRIOR TO AUGER OPERATIONS

- PLACEMENT OF CAISSON REINFORCEMENT

- PLACEMENT OF PILE CAP REINFORCEMENT AND BOLLARDS/SLEEVES

- AT COMPLETION OF PROJECT





IDS
IDS GROUP

IDS Project No. 165023.00

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

CITY OF MANHATTAN BEACH
PUBLIC WORKS DEPARTMENT – ENGINEERING DIVISION

PIER BOLLARD PROJECT
1 MANHATTAN BEACH BLVD., MANHATTAN BEACH, CA 90266
GENERAL NOTES

REVISIONS		RECOMMENDED BY:		CITY ENGINEER _____ DATE _____		DIRECTOR OF PUBLIC WORKS _____ DATE _____	
NO.	DESCRIPTION	BY	DATE	REVIEWED BY: _____ PREM KUMAR _____ DATE _____	SCALE: _____ AS SHOWN _____	DATE: _____ DATE _____	DRAWING NO. _____ SHEET _____ OF _____
REFERENCES		STRUCTURAL BY: _____ IDS GROUP, INC. _____ DATE _____					

ABBREVIATIONS

AT		K	KIPS; 1000
&	AND	K.P.	KING POST
A.B.	ANCHOR BOLT		
ABV.	ABOVE		
ADD'L. (ADDL.)	ADDITIONAL	LAT.	LATERAL
ADJ.	ADJACENT	L.B.	LAG BOLT
ALT.	ALTERNATE	LB (#)	POUND
ALUM.	ALUMINUM	L.F.	LINEAL FEET (FOOT)
APPRX. (APPROX.)	APPROXIMATE(LY)	LLH	LONG LEG HORIZONTAL
		LLV	LONG LEG VERTICAL
		LT. WT.	LIGHT WEIGHT
BLW.	BELOW		
BM.	BEAM		
BNDRY.	BOUNDARY	MAX.	MAXIMUM
B.O.C.	BOTTOM OF CONCRETE	M.B.	MACHINE BOLT
B.O.F.	BOTTOM OF FOOTING	MECH.	MECHANICAL
BOT. (B)	BOTTOM	M.E.P.	MECHANICAL, ELECTRICAL AND PLUMBING
BRCG.	BRACING	MEZZ.	MEZZANINE
BRG.	BEARING	MFR.	MANUFACTURER
BTWN.	BETWEEN	MIN.	MINIMUM
		MISC.	MISCELLANEOUS
		MTL.	METAL
CBC	CALIFORNIA BUILDING CODE		
CANT.	CANTILEVER(ED)		
C.F.	CUBIC FEET (FOOT)		
C.I.P.	CAST-IN-PLACE	(N)	NEW
C.J.	CONTROL JOINT; CONSTRUCTION JOINT	NO. (#)	NUMBER
		N.T.S.	NOT TO SCALE
C.L. (℄)	CENTER LINE		
CLR.	CLEAR	O/C (O.C.)	ON CENTER
COL.	COLUMN	O.S.	OPPOSITE HAND
CONC.	CONCRETE	OPNG.	OPENING
CONN.	CONNECTION	OPP.	OPPOSITE
CONST.	CONSTRUCTION	ORTHO.	ORTHOGONAL
CONT.	CONTINUOUS		
CTR.	CENTER(ED)	PCF	POUNDS PER CU.FT.
C.Y.	CUBIC YARD	P.L.	PLATE
		P.P.	PARTIAL-PENETRATION
DBA	DEFORMED BAR ANCHOR	P.S.F.	POUNDS PER SQUARE FOOT
DBL.	DOUBLE	P.S.I.	POUNDS PER SQUARE INCH
DEPT.	DEPARTMENT	PT	PRETENSIONED
DIA. (ø)	DIAMETER	PVMNT.	PAVEMENT
DIAG.	DIAGONAL		
DIM.	DIMENSION	QTY.	QUANTITY
DN.	DOWN		
DO	DITTO (REPEAT)	RAD. (R)	RADIUS
DWG. (DWGS.)	DRAWING(S)	REF.	REFERENCE
DWL.	DOWEL	REINF.	REINFORCEMENT (ING)
		REQ'D. (REQD.)	REQUIRED
		RF.	ROOF
EA.	EACH	SCH.	SCHEDULE
E.F.	EACH FACE	SEP.	SEPARATION
E.J.	EXPANSION JOINT	SHT.	SHEET
EL.	ELEVATION	SIM.	SIMILAR
ELEC.	ELECTRICAL	SKW.	SKEW(ED)
EMB.	EMBED(MENT)	S.O.D.	SLAB-ON-GRADE
ENG.	ENGINEER	SPEC.	SPECIFICATION
EQ.	EQUAL	SQ.	SQUARE
EQPT.	EQUIPMENT	STD.	STANDARD
EQUIV.	EQUIVALENT	STAGG.	STAGGER(ED)
EXP.	EXPANSION	STIFF.	STIFFENER
EXIST. (E)	EXISTING	STIR.	STIRRUP
EXT.	EXTERIOR	STL.	STEEL
		STRUC(T).	STRUCTURAL
FDN.	FOUNDATION	SUSP.	SUSPENDED
FIN.	FINISH(ED)	SYMM.	SYMMETRICAL
FLR.	FLOOR	SD.	STORM DRAIN PIPING
F.S.	FAR SIDE		
FT. (')	FOOT (FEET)	T&B	TOP AND BOTTOM
FTG.	FOOTING	TEMP.	TEMPORARY
F.V.	FIELD VERIFY	THK.	THICK(NESS)
F.P.	FIRE PROTECTION PIPING	T.O.	TOP OF
F.M.	FIRE MAIN LINE	T.O.C.	TOP OF CONCRETE
		T.O.S.	TOP OF STEEL;
GA.	GAUGE	TEL.	TELEPHONE CONDUIT
GALV.	GALVANIZE(D)	T.O.W.	TOP OF WALL
GRD.	GRADE	TRANS.	TRANSVERSE
		TYP.	TYPICAL
HD.	HOLDOWN; HAND		
HDR.	HEADER	U.O.N. (U.N.O.)	UNLESS OTHERWISE NOTED
HGR.	HANGER	UTIL.	UTILITY
HORIZ. (H)	HORIZONTAL		
H.S.B.	HIGH STRENGTH BOLT	VERT. (V)	VERTICAL
HT.	HEIGHT	V.I.F.	VERIFY IN FIELD
I.D.	INSIDE DIAMETER	W/	WITH
IN. (")	INCH(ES)	(W)	WIDE; WIDTH
INFO.	INFORMATION	W.P.	WORK POINT
		WT.	WEIGHT
JT.	JOINT		

REINFORCING STEEL

- ALL CONCRETE SHALL BE REINFORCED. REINFORCING STEEL SHALL BE NEW DEFORMED STEEL BARS CONFORMING TO ASTM A615, GRADE 60 UNLESS OTHERWISE NOTED.
- REINFORCING STEEL SHALL BE FIRMLY SUPPORTED AND ACCURATELY PLACED.
- COMPLETE REINFORCING STEEL PLACEMENT DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH ACI BY THE CONTRACTOR AND REVIEWED BY THE ENGINEER AND SHALL BE AVAILABLE ON THE JOB SITE PRIOR TO PLACING OF CONCRETE.
- ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS SHALL BE SECURELY TIED IN PLACE BEFORE CONCRETE IS PLACED.
- ALL REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60. DEFORMATIONS SHALL BE IN ACCORDANCE WITH ASTM A305.
- ALL WELDING OF REINFORCING STEEL SHALL CONFORM TO AWS D1.4 AND SHALL BE PERFORMED BY CERTIFIED WELDERS USING AWS A5.5 E-90XX (TABLE 5.1, AWS D1.4) LOW HYDROGEN MOISTURE RESISTING ELECTRODES UNLESS OTHERWISE NOTED.
- NO HEATING SHALL BE ALLOWED FOR BENDING OF REINFORCING STEEL.
- TYPE 2 MECHANICAL COUPLERS WITH CURRENT ICC-ES EVALUATION REPORTS MAY BE USED AT THE CONTRACTOR'S DISCRETION IN LIEU OF LAP SPLICES, WELDING OR OTHER ACCEPTABLE MEANS FOR JOINING REINFORCING STEEL PROVIDING SUCH USE DOES NOT ADVERSELY AFFECT DESIGN INTENT, CODE REQUIREMENTS OR CONSTRUCTABILITY.
- ALL MECHANICAL COUPLERS SHALL BE REVIEWED BY THE ENGINEER AND INSPECTED DURING CONSTRUCTION.
- ALL REINFORCING STEEL INTERRUPTED BY STRUCTURAL STEEL SHALL TERMINATE WITHIN 1" OF THE STEEL SURFACE WITH A 90° STANDARD HOOK UNLESS OTHERWISE NOTED.
- EPOXY COATED REINFORCEMENT SHALL BE PROVIDED AND SHALL CONFORM TO ASTM A775 OR ASTM A934.

STRUCTURAL STEEL

- THE CONTRACTOR SHALL SUBMIT ALL STRUCTURAL STEEL AND MISCELLANEOUS STEEL SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
- MATERIAL TEST OR REPORTS FOR HOT-ROLLED STRUCTURAL SHAPES, PLATES, AND BARS SHALL BE MADE IN ACCORDANCE WITH ASTM A6. FOR SHEET MATERIAL, TEST SHALL BE MADE IN ACCORDANCE WITH ASTM A568. FOR TUBING AND PIPE, SUCH TEST SHALL BE MADE IN ACCORDANCE WITH REQUIREMENTS OF THE APPLICABLE ASTM STANDARDS.
- STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING, UNLESS OTHERWISE NOTED:
A. ANGLES, PLATES AND BARS: ASTM A36 (Fy=36ksi, Fu=58ksi)
B. PIPES: ASTM A53, GRADE B (Fy=35ksi, Fu=60ksi)
- ALL WELDING OF STEEL SHALL CONFORM TO AWS D1.1 AND SHALL BE PERFORMED BY AWS CERTIFIED WELDERS USING E-70XX LOW HYDROGEN MOISTURE RESISTING ELECTRODES UNLESS OTHERWISE NOTED.
- USE THE MINIMUM SIZE OF WELDS IN ACCORDANCE WITH AISC MANUAL OF STEEL CONSTRUCTION AT STEEL TO STEEL JOINTS UNLESS A LARGER WELDING SIZE IS SPECIFIED ON THE PLANS.
- WHERE LENGTH OF WELDING IS NOT SHOWN, IT SHALL BE FULL LENGTH OF JOINT. ALL BUTT WELDS SHALL BE COMPLETE PENETRATION WELDS UNLESS OTHERWISE NOTED.
- ALL STEEL SHALL BE ASTM A312 T316 STAINLESS STEEL, #4 BRUSHED SURFACE FINISH, UNLESS OTHERWISE NOTED.
- UNDER NO CIRCUMSTANCES SHALL DRAWINGS BE SCALED OR REFERENCE ELECTRONIC BUILDING INFORMATION BE USED TO DETERMINE ELEVATIONS OR DIMENSIONS.

CITY OF MANHATTAN BEACH

PUBLIC WORKS DEPARTMENT – ENGINEERING DIVISION

PIER BOLLARD PROJECT

1 MANHATTAN BEACH BLVD., MANHATTAN BEACH, CA 90266

GENERAL NOTES

RECOMMENDED BY:

CITY ENGINEER _____ DATE _____

DIRECTOR OF PUBLIC WORKS _____ DATE _____

REVIEWED BY: _____
PREM KUMAR _____ DATE _____

SCALE: AS SHOWN DATE: _____ DRAWING NO. _____

STRUCTURAL BY: _____
IDS GROUP, INC. _____ DATE _____

SHEET _____ OF _____

S002

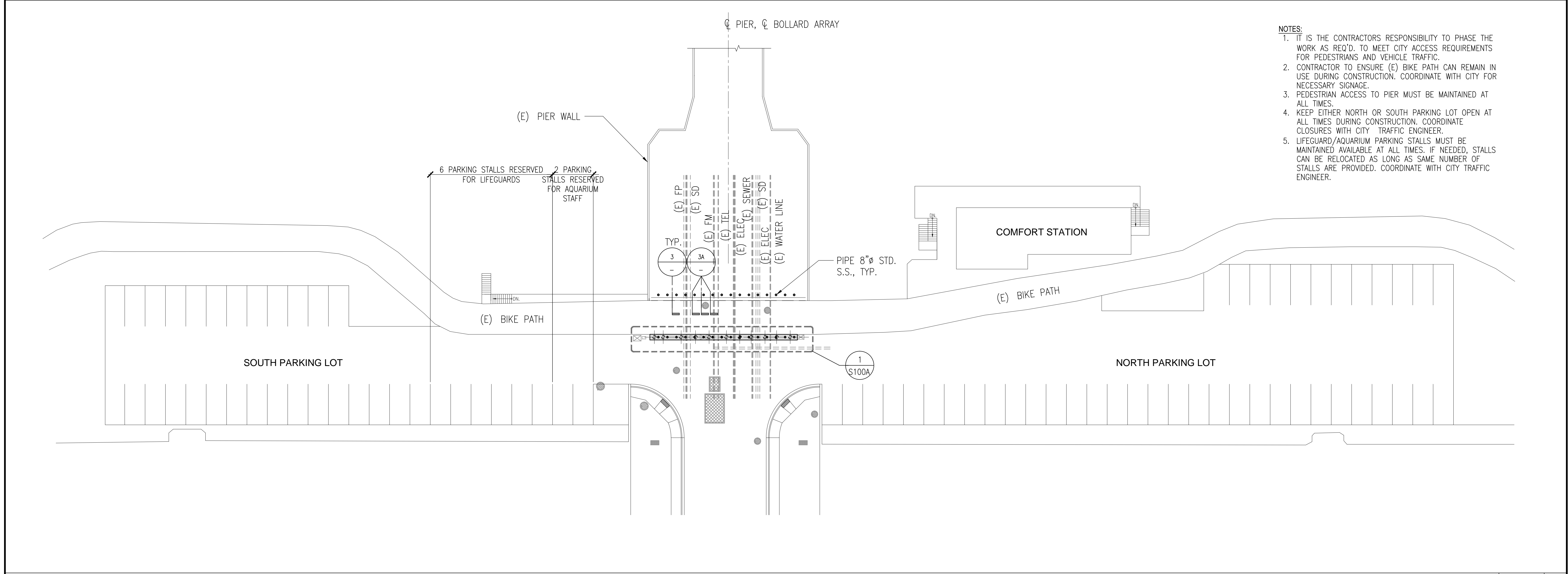


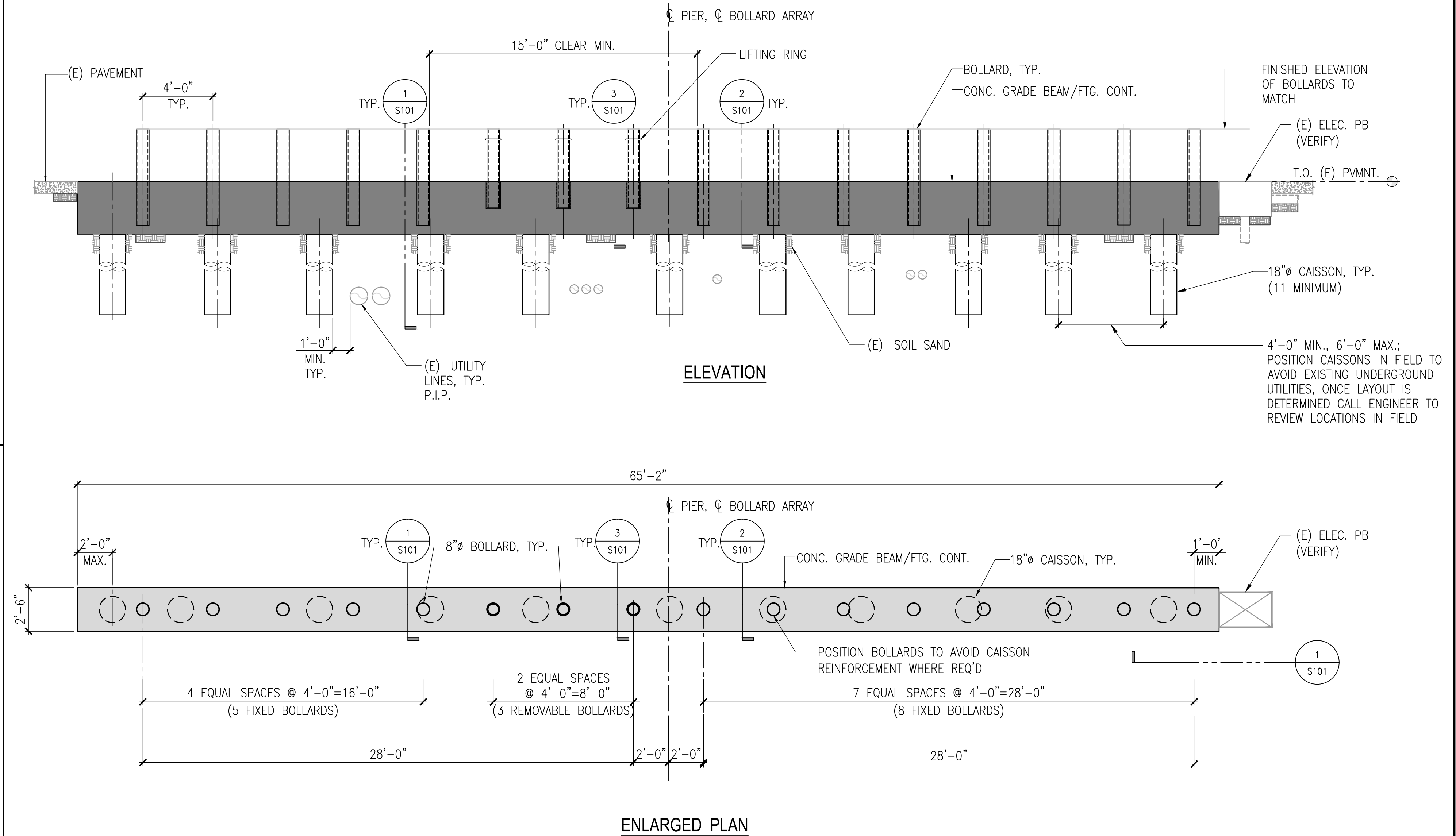
IDS Project No. 165023.00

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

REVIEWED BY	DATE

REFERENCES





BOLLARDS LAYOUT PLAN

SCALE: 1/4"=1'-0"
S102

1

CITY OF MANHATTAN BEACH
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1 MANHATTAN BEACH BLVD., MANHATTAN BEACH, CA 90266
ENLARGED PLAN & ELEVATION

RECOMMENDED BY:		CITY ENGINEER		DATE	DIRECTOR OF PUBLIC WORKS		DATE
REVIEWED BY:		PREM KUMAR		DATE	SCALE:		DATE:
STRUCTURAL BY:		IDS GROUP, INC.		DATE	AS SHOWN		DATE:
				DATE	SHEET		OF

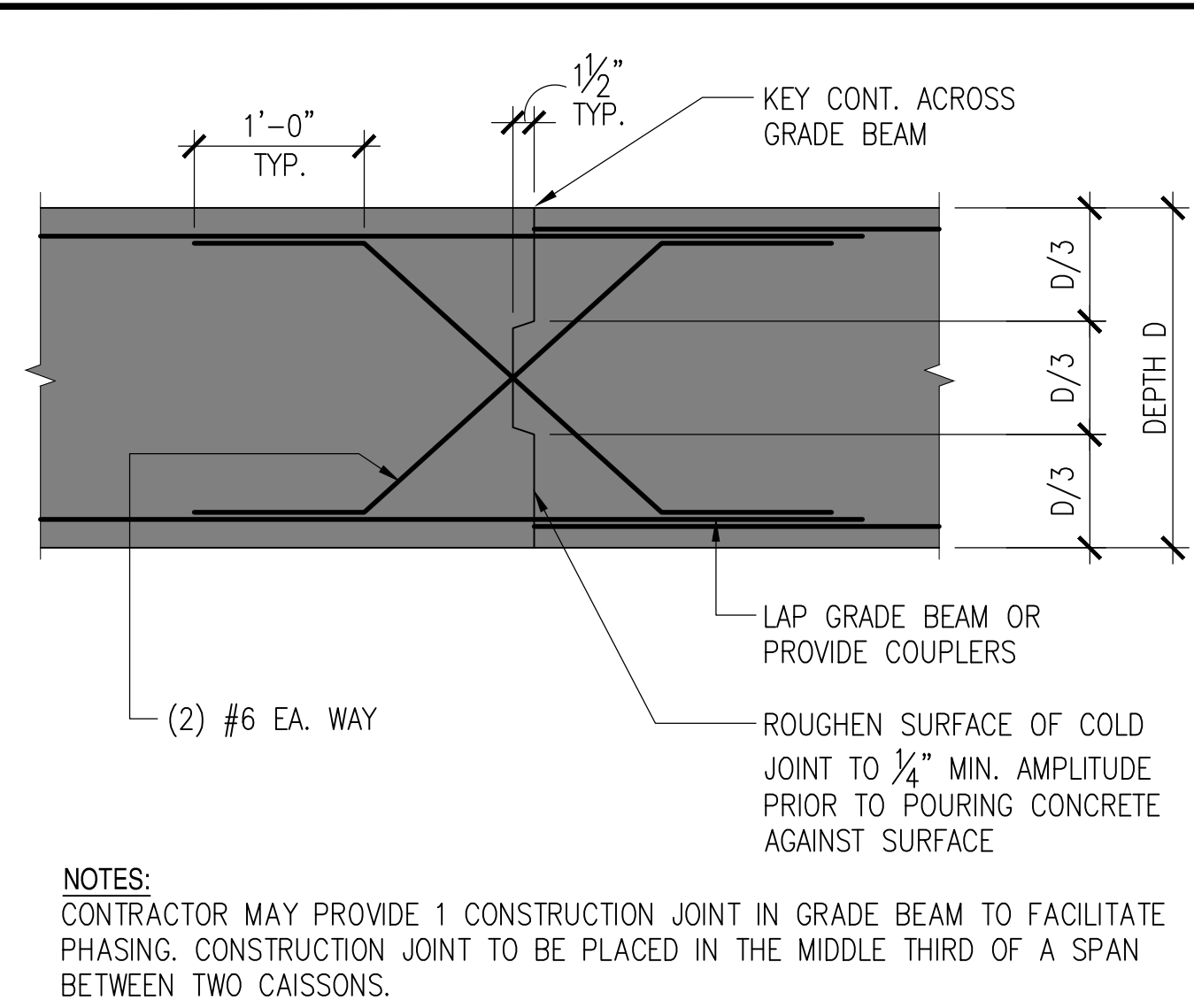
S100A



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IRVINE, CA 92606
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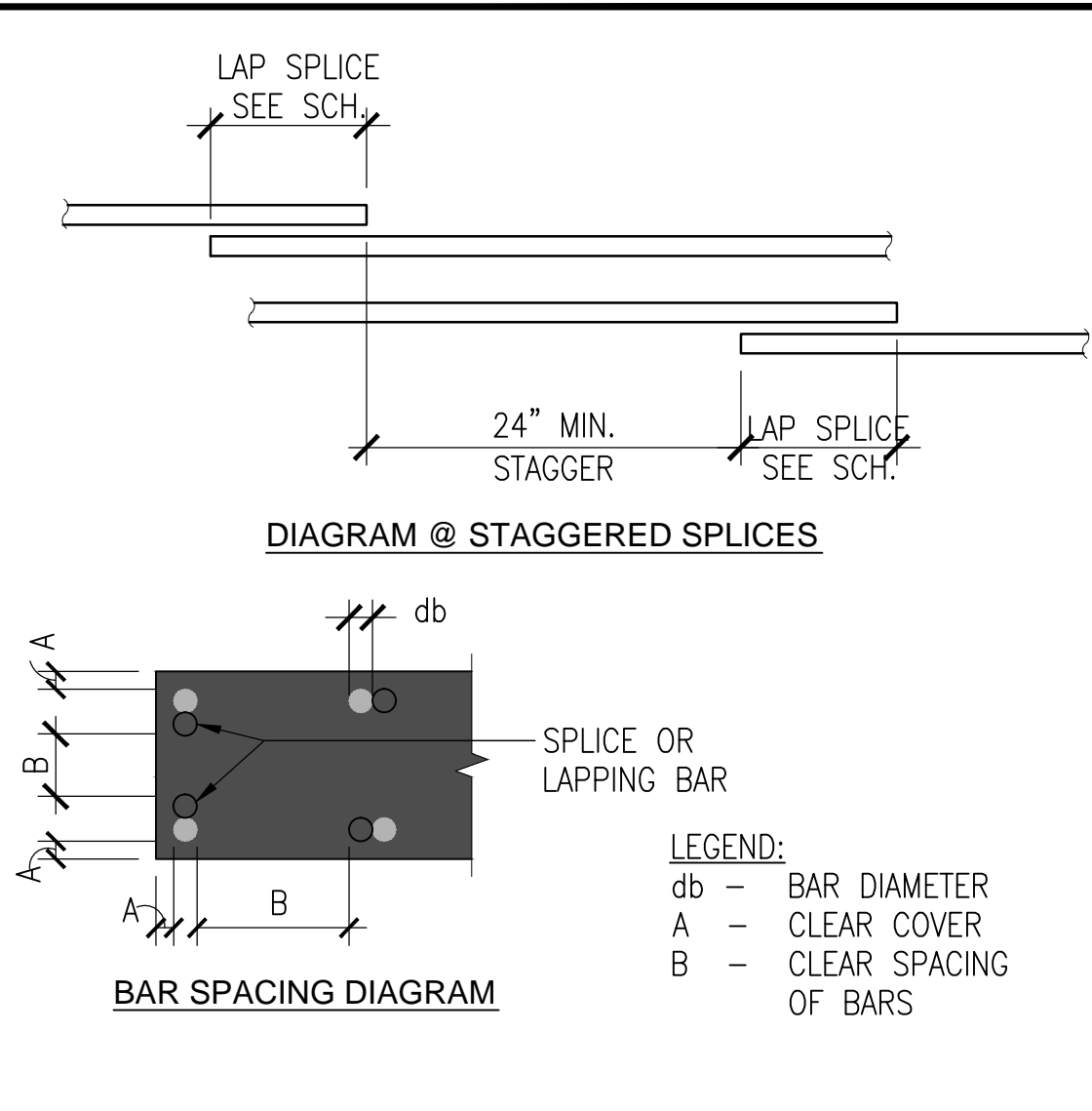
REFERENCES	



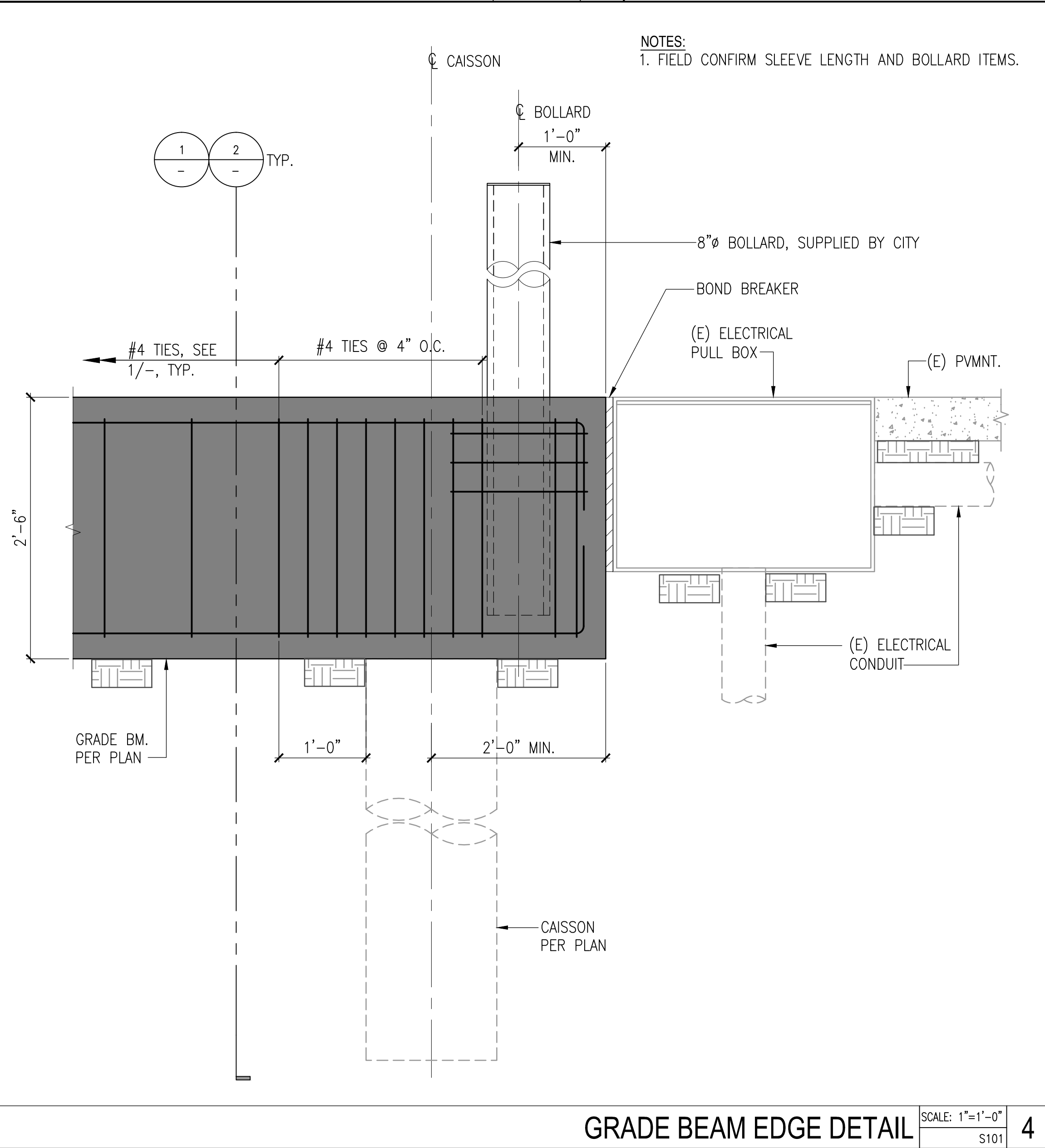
CONC. GRADE BM. CONSTRUCTION JOINT

- NOTES:**
- THE SCHEDULED LAP SPLICE LENGTHS ARE FOR EITHER OF THE FOLLOWING CASES:
A. CLEAR SPACING OF BARS BEING DEVELOPED OR SPliced NOT LESS THAN (2db), AND CLEAR COVER NOT LESS THAN (db).
B. CLEAR SPACING OF BARS BEING DEVELOPED OR SPliced SHALL NOT BE LESS THAN (db), CLEAR COVER NOT LESS THAN (db), AND STIRRUPS/TIES THROUGHOUT LAP SPLICE NOT MORE THAN 6" ON CENTER.
 - MULTIPLY LAP SPLICE LENGTHS BY 1.5 FOR CASES NOT MEETING THE CONDITIONS AS DESCRIBED IN NOTE 1.
 - USE CLASS "B" SPLICES FOR VERTICAL & HORIZONTAL BARS TYP. U.O.N.
 - TOP BARS ARE HORIZONTAL BARS PLACED SO THAT 12-INCHES OR MORE OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
 - VALUES SHOWN ARE FOR NORMAL WEIGHT CONCRETE. IF LIGHTWEIGHT CONCRETE, MULTIPLY LAP SPLICE LENGTHS BY 1.3.
 - (REFER TO NOTE 2 FOR ANY ADDITIONAL INCREASES IN LAP SPLICE LENGTHS).
 - VALUES SHOWN ARE FOR UNCOATED GRADE 60 REINFORCEMENT. FOR EPOXY-COATED REINFORCEMENTS MULTIPLY LAP SPLICE LENGTHS BY 1.2.
 - ALL LAP SPLICE LENGTHS AT EACH LOCATION SHALL BE DEFINED BY THE SHOP DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL COVER & SPACING REQUIREMENTS FOR LAP SPLICES LISTED BY THE SHOP DRAWINGS. FIELD CORRECTIONS SHALL BE MADE AT NO COST TO THE OWNER.
 - WHEN LAPPING A SMALLER BAR WITH A LARGE DIAMETER BAR USE THE LAP LENGTH FOR THE SMALL DIAMETER BAR.

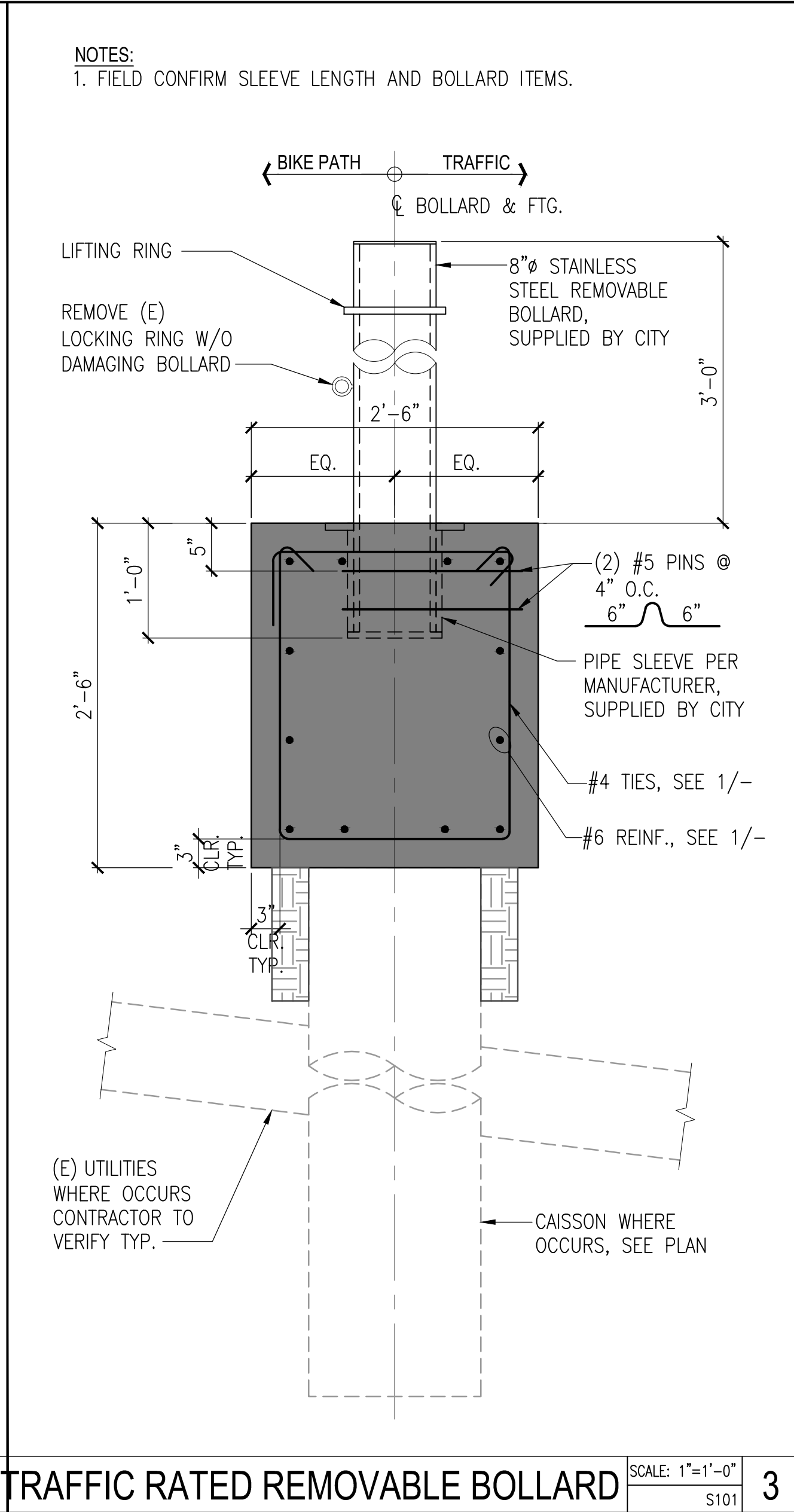
STRENGTH	f'c = 3,000 PSI fy = 60,000 PSI				f'c = 4,000 PSI fy = 60,000 PSI				f'c = 5,000 PSI fy = 60,000 PSI			
CLASS OF LAP SPLICE	CLASS "A"		CLASS "B"		CLASS "A"		CLASS "B"		CLASS "A"		CLASS "B"	
BAR SIZE	BASIC	TOP BAR	BASIC	TOP BAR	BASIC	TOP BAR	BASIC	TOP BAR	BASIC	TOP BAR	BASIC	TOP BAR
#3	18"	24"	24"	31"	15"	20"	20"	26"	13"	17"	17"	22"
#4	22"	29"	29"	38"	19"	25"	25"	33"	17"	23"	23"	29"
#5	28"	37"	37"	48"	24"	31"	31"	41"	22"	28"	28"	36"
#6	34"	44"	44"	57"	29"	38"	38"	50"	26"	34"	34"	44"
#7	49"	64"	64"	83"	42"	55"	55"	71"	38"	49"	49"	63"
#8	56"	73"	73"	95"	48"	62"	62"	81"	43"	56"	56"	72"
#9	63"	82"	82"	106"	54"	70"	70"	91"	48"	63"	63"	81"
#10	71"	92"	92"	120"	61"	79"	79"	103"	54"	70"	70"	91"
#11	79"	103"	103"	134"	68"	88"	88"	115"	60"	78"	78"	101"



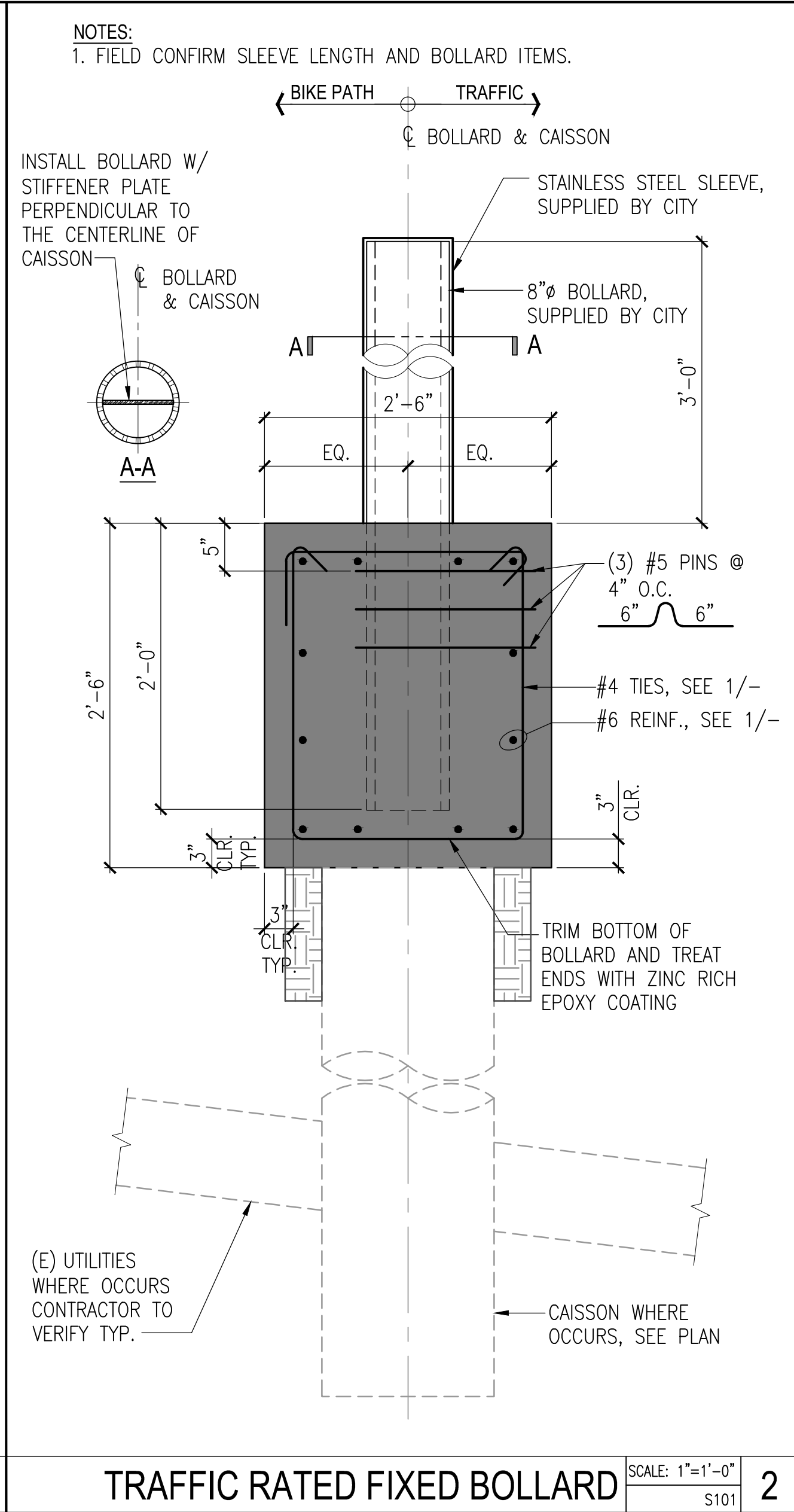
TYPICAL REINF. LAP SPLICE AT CONCRETE



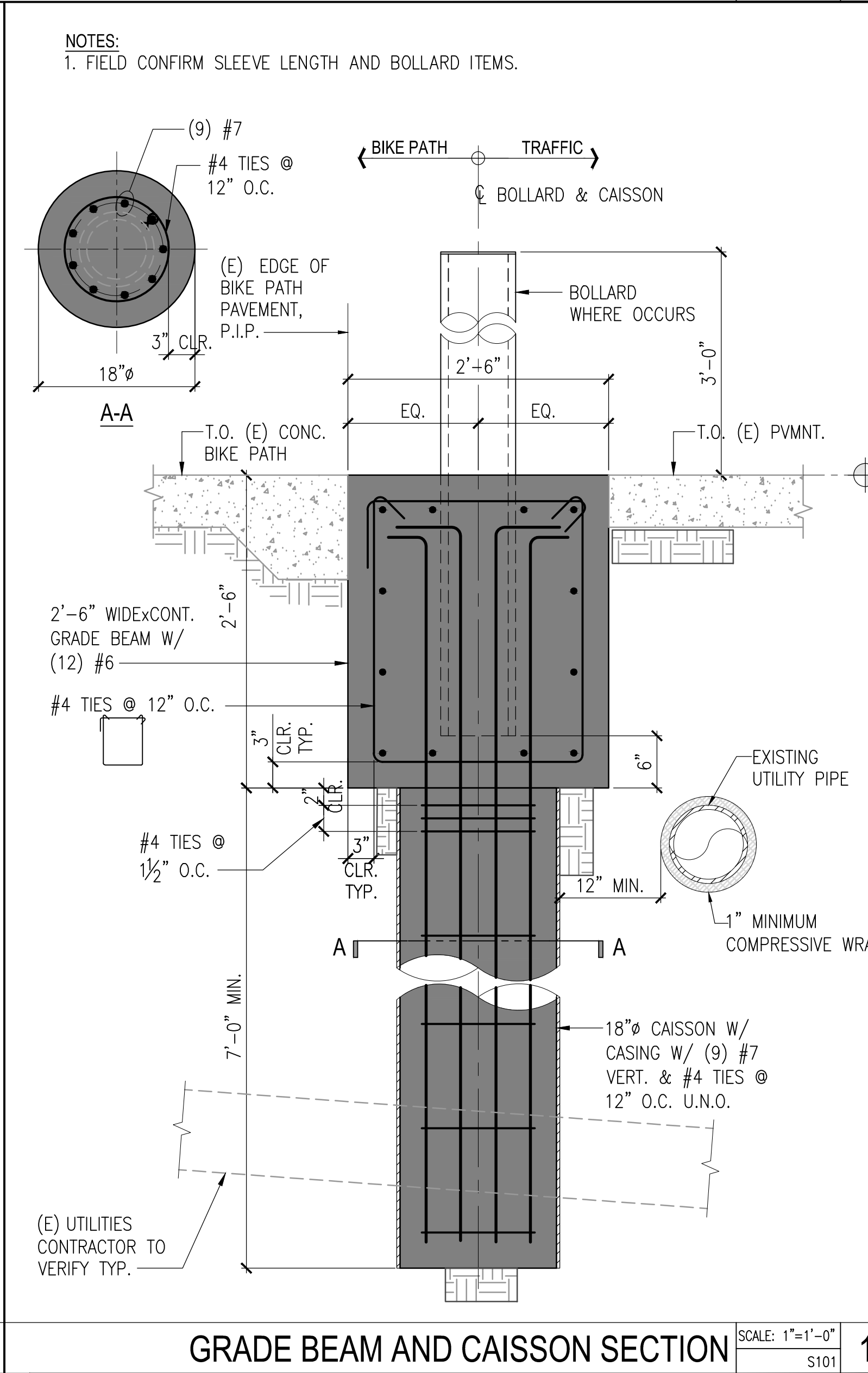
GRADE BEAM EDGE DETAIL



TRAFFIC RATED REMOVABLE BOLLARD



TRAFFIC RATED FIXED BOLLARD



GRADE BEAM AND CAISSON SECTION



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CITY OF MANHATTAN BEACH
PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION

PIER BOLLARD PROJECT
1 MANHATTAN BEACH BLVD., MANHATTAN BEACH, CA 90266
DETAILS

REVISIONS			
NO.	DESCRIPTION	BY	DATE

RECOMMENDED BY:		CITY ENGINEER		DATE	DIRECTOR OF PUBLIC WORKS		DATE
REVIEWED BY:		PREM KUMAR			SCALE: AS SHOWN		
STRUCTURAL BY:		IDS GROUP, INC.			DRAWING NO.		
					SHEET		OF

S101