# PROJECT SITE R.D. XXXX

## LOS ANGELES COUNTY PUBLIC WORKS

# PRIVATE DRAIN NO XXXX TRACT/PERCEL MAP/CUP NO XXXXX OR ADDRESS EIMP XXXXXXXXXX

### **INDEX TO PROJECT PLANS**

SHEET NUMBER DESCRIPTION

1 TITLE SHEET

2 GENERAL NOTES, WATER QUALITY NOTES

### **INDEX TO STANDARD DRAWINGS**

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

<u>DWG. NO.</u>

**DESCRIPTION** 

LOCATION MAP

NOT TO SCALE

TS-PD-DL
(24X36 SHEET)

AMERICAN PUBLIC WORKS ASSOCIATION

STD. PLAN

TITLE



TITLE SHEET
STORM DRAIN PLANS
LOS ANGELES COUNTY PUBLIC WORKS



COMPANY NAME & ADDRESS

PROJECT ENGINEER DATE EIMP XXXXXXXXXX TRACK NO. XXXX DDNO XXXX SHEET 1 OF X

### **GENERAL NOTES**

- A PERMIT SHALL BE OBTAINED AND ALL FEES AND DEPOSITS FOR CONSTRUCTION INSPECTION SHALL BE PAID TO THE PUBLIC WORKS AT THE PERMIT COUNTER, 900 SOUTH FREMONT AVENUE, FLOOR, PRIOR TO STARTING WORK UNDER THIS CONTRACT. ALSO, ALL OTHER REQUIRED PERMITS, SUCH AS ROAD EXCAVATION PERMITS, MUST BE OBTAINED PRIOR TO STARTING WORK.
- 2. THE CONTRACTOR SHALL CONTACT THE DISTRICT OFFICE LISTED ON THE "APPLICATION FOR STORM DRAIN CONSTRUCTION INSPECTION FORM I" TO ARRANGE FOR AN ACCEPTABLE CONSTRUCTION START DATE.
- APPROVAL OF THIS PLAN BY THE COUNTY OF LOS ANGELES DOES NOT CONSTITUTE A REPRESENTATION TO THE ACCURACY OF THE LOCATION, OR THE EXISTENCE OR NONEXISTENCE OF ANY UNDERGROUND UTILITY, PIPE, OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THIS NOTE APPLIES TO ALL SHEETS.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (INCLUDING SUPPLEMENTS), AND SHALL BE PROSECUTED ONLY IN THE PRESENCE OF THE DIRECTOR OF PUBLIC WORKS.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 7-10.4.1 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION IN REGARD TO SAFETY ORDERS AND SHALL CONFORM TO THE "MINIMUM PUBLIC SAFETY REQUIREMENTS" AS SHOWN ON THE LOS ANGELES COUNTY PUBLIC WORKS STANDARD PLAN 6008.
- 6. ELEVATIONS ARE IN FEET ABOVE U.S.C. AND G.S. MEAN SEA LEVEL DATUM OF 1929 UNLESS OTHERWISE INDICATED.
- 7. NO CONCRETE SHALL BE PLACED UNTIL THE FORMS AND REINFORCING STEEL HAVE BEEN PLACED, INSPECTED, AND APPROVED.
- 8. ALL STRUCTURAL CONCRETE SHALL BE PORTLAND CEMENT CONCRETE WITH AN ULTIMATE 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
- TRANSVERSE REINFORCEMENT AND TRANSVERSE JOINTS SHALL BE PLACED AT RIGHT ANGLES (OR RADIAL) TO THE CONDUIT CENTERLINE EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS.
- 10. ALL STEEL ADJACENT TO FACE OF CONCRETE SHALL HAVE A 2-1/2-INCH CLEARANCE UNLESS OTHERWISE SPECIFIED.
- 11. REINFORCEMENT SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE STEEL, PER ASTM A615GRADE 60.
- 12. ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "MANUAL OF STANDARD PRACTICE."
- 13. DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO CENTERLINE OF STEEL UNLESS OTHERWISE NOTED.
- 14. ALL STEEL THAT IS TO BE CONTINUOUS SHALL HAVE A MINIMUM LAP OF 30 BAR DIAMETERS OR 18 INCHES, WHICHEVER IS GREATER.
- 15. ALL CONSTRUCTION JOINTS IN THE FOOTING OR SLABS AND WALLS SHALL BE IN THE SAME PLANE. NO STAGGERING OF JOINTS WILL BE PERMITTED.
- 16. ALL EXPOSED EDGES SHALL BE FINISHED WITH A 3/4-INCH CHAMFER
- 17. UNLESS OTHERWISE SHOWN, CONCRETE DIMENSIONS SHALL BE MEASURED VERTICALLY OR HORIZONTALLY AND PARALLEL OR AT RIGHT ANGLES (OR RADIAL) TO THE CENTER LINE OF CONSTRUCTION.
- 18. CONCRETE BACKFILL IS REQUIRED WHEN THE PIPE HAS LESS THAN ONE-FOOT OF COVER. THE CONCRETE BACKFILL SHALL CONSIST OF 1:3:5 MIX, PORTLAND CEMENT CONCRETE POURED FROM WALL TO WALL OF TRENCH AND FROM BOTTOM OF TRENCH TO A MINIMUM OF 4 INCHES OVER THE TOP OF THE PIPE.
- 19. ALL PIPES SHALL BE PLACED IN TRENCH IN NATURAL GROUND AND/OR COMPACTED FILL. THE GROUND LEVEL BEFORE THE TRENCHING SHALL BE AT LEAST 3 FEET ABOVE THE TOP OF THE PIPE ELEVATION OR AT FINISH SURFACE ELEVATION, WHICHEVER IS LESS.
- 20. ALL BACKFILL AND RELATIVE COMPACTION FILLS OUTSIDE OF STREET RIGHT OF WAY SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 90 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM SOIL TEST D 1557-91 METHOD D UNLESS OTHERWISE SPECIFIED. THIS SHALL BE CERTIFIED BY A SOILS ENGINEER. THIS CERTIFICATION SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO ACCEPTANCE OF THE WORK BY THE COUNTY.
- 21. ALL BACKFILL AND FILLS WITHIN STREET RIGHTS OF WAY SHALL BE COMPACTED IN ACCORDANCE WITH CITY REQUIREMENTS UNLESS OTHERWISE NOTED AND INSPECTED BY THE CITY. THE SOIL COMPACTION SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER.
- 22. PIPE BEDDING SHALL BE:

IN ACCORDANCE WITH LOS ANGELES COUNTY PUBLIC WORKS STANDARD PLAN NO. 3092 UNLESS OTHERWISE NOTED.

ACCORDING TO STANDARD PLAN NO. 3080, CASE III, EXCEPT BELL AND SPIGOT PIPE, WHICH SHALL BE CASE II BEDDING UNLESS OTHERWISE SHOWN. W VALUES SHALL BE AS SPECIFIED ON STANDARD PLAN NO. 3080 FOR CASE III BEDDING, NOTES 3 (A), 3 (B), AND 3 (C). IF THE W: VALUE AT THE TIP OF THE PIPE IS EXCEEDED, THE BEDDING SHALL BE MODIFIED AND/OR PIPE OF ADDITIONAL STRENGTH SHALL BE PROVIDED. THE PROPOSED MODIFICATION SHALL BE APPROVED BY PUBLIC WORKS.

- 23. PIPE SHALL BE EMBEDDED 5 INCHES INTO ALL STRUCTURES INCLUDING INLET AND HEAD WALLS UNLESS OTHERWISE SPECIFIED,
- 24. THE MINIMUM CONCRETE COVER FOR REINFORCEMENT IN PRECAST CONCRETE PIPE SHALL BE 1 INCH IN PIPE HAVING A WALL/THICKNESS OF 2 1/2 INCHES OR GREATER AND 3/4 INCH IN PIPE HAVING A WALL THICKNESS OF LESS THAN 2 1/2 INCHES.
- 25. ALL CATCH BASINS WITHIN THE DEDICATED STREET RIGHT OF WAY SHALL BE CONSTRUCTED PER THE STREET PLANS
- 26. THE CONTRACTOR SHALL PROVIDE TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS A DRAINAGE SYSTEM FOR CONTRIBUTORY FLOWS TO BE OPERABLE AT ALL TIMES UNTIL THIS STORM DRAIN SYSTEM IS ACCEPTED FOR MAINTENANCE. THE DESIGN OF THE DRAINAGE SYSTEM MUST BE PREPARED UNDER THE DIRECTION OF A CIVIL ENGINEER.
- 27. ALL REFERENCES ON THIS PLAN TO THE COUNTY ENGINEER, ROAD DEPARTMENT, OR FLOOD CONTROL DISTRICT SHALL APPLY TO THE APPROPRIATE ELEMENTS OF PUBLIC WORKS.
- 28. EXISTING UTILITIES SHALL BE MAINTAINED IN PLACE BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
- 29. WHERE THE UTILITIES ARE INDICATED ON THE DRAWINGS TO BE SUPPORTED, SAID SUPPORTS SHALL BE IN ACCORDANCE WITH STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION NO. 224 UNLESS OTHERWISE INDICATED.
- 30. ALL OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES, OR SIMILAR STRUCTURES SHALL BE SEALED WITH 8 INCHES OF BRICK AND MORTAR OR 6 INCHES OF CONCRETE UNLESS OTHERWISE SHOWN.
- 31. MANHOLES SHALL USE THE STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION NO. 630 FOR THE "FRAME AND COVER" AND NO. 635 FOR THE "STANDARD DROP STEP."
- 32. THIS STORM DRAIN WILL NOT BE FIELD ACCEPTED UNTIL THE STREETS HAVE BEEN PAVED, MANHOLES BROUGHT TO GRADE, AND THE SYSTEM CLEANED TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS.
- 33. A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FROM THE REGIONAL WATER QUALITY CONTROL BOARD IS REQUIRED BEFORE ANY DISCHARGE OF NONSTORMWATER INTO THE STORM DRAIN IS ALLOWED
- 34. THE LATEST REVISED STANDARD PLAN OR DRAWING SHALL BE USED UNLESS OTHERWISE NOTED.
- 35. THE SOILS ENGINEER OF RECORD SHALL INSPECT AND APPROVE THE FOUNDATIONEXCAVATIONS BEFORE STEEL OR CONCRETE IS PLACED.
- 36. STORM DRAIN MANHOLE COVERS CONSTRUCTED PER S.P.P.W.C. STANDARD PLANS 630, 631, 632, AND 633 SHALL BE CAST WITH THE LETTERS "L.A.C.F.C.D.". THE LETTERS SHALL BE 1 INCH IN HEIGHT AND PLACED BELOW THE LETTER "D" IN THE CENTER OF THE COVER.
- 37. STORM DRAIN MANHOLE COVERS CONSTRUCTED PER S.P.P.W.C. STANDARD PLAN 312 SHALL BE CAST WITH THE LETTERS "L.A.C.F.C.D.". THE LETTERS SHALL BE 1 INCH IN HEIGHT AND PLACED BELOW THE LETTER "D"IN THE CENTER OF THE COVER.
- 38. ALL ABOVE GROUND FACILITIES SHALL BE STAMPED WITH THE DRAIN AND LINE NAME. THE LETTERING SHOULD BE 4"BLACK TEXT ON A YELLOW BACKGROUND.
- 39. EVERY 100 FEET STATIONS SHALL BE LABELED ON THE INSIDE OF ALL STORM DRAINS AND WALL OF OPEN CHANNELS. THE LETTERING SHOULD BE 4"BLACK TEXT ON A YELLOW BACKGROUND AND SHOULD BE PLACED IN THE SOFFIT OF PIPES AND THE TOP 2 FEET OF A CHANNEL WALL.
- 40. FOR ALL DEBRIS BASINS, THE 0%, 5%, AND 25% DEBRIS CONE ELEVATIONS SHALL BE LABELED ON THE CONCRETE FACING SLAB AND THE STAND PIPE.

### STORMWATER POLLUTION CONTROL REQUIREMENTS FOR ROAD CONSTRUCTION

### STORMWATER POLLUTION PLAN NOTES

### A.NOTES

- 1. EVERY EFFORT SHOULD BE MADE TO ELIMINATE THE DISCHARGE OF NON-STORMWATER FROM THE PROJECT SITE AT ALL TIMES.
- ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON-SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEETFLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES, OR WIND.
- STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
- 4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
- EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON-SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
- TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
- SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.

**EQUIPMENT TRACKING CONTROL** 

TC3 ENTRANCE/OUTLET TIRE WASH

NON-STORMWATER MANAGEMENT

NS2 DEWATERING OPERATIONS

NS5 CLEAR WATER DIVERSION

TC1 STABILIZED CONSTRUCTION ENTRANCE EXIT

TC2 STABILIZED CONSTRUCTION ROADWAY

NS1 WATER CONSERVATION PRACTICES

NS3 PAVING AND GRINDING OPERATIONS

NS8 VEHICLE AND EQUIPMENT CLEANING

NS10 VEHICLE AND EQUIPMENT MAINTENANCE

**WASTE MANAGEMENT & MATERIAL POLLUTION CONTROL** 

MATERIAL DELIVERY AND STORAGE

SPILL PREVENTION AND CONTROL

HAZARDOUS WASTE MANAGEMENT

CONTAMINATION SOIL MANAGEMENT

SANITARY/SEPTIC WASTE MANAGEMENT

REVISIONS

CONCRETE WASTE MANAGEMENT

STOCKPILE MANAGEMENT

SOLID WASTE MANAGEMENT

NS9 VEHICLE AND EQUIPMENT FUELING

NS4 TEMPORARY STREAM CROSSING

NS6 ILLICIT CONNECTION/DISCHARGE

NS7 POTABLE WATER/IRRIGATION

NS11 PILE DRIVING OPERATIONS

NS14 MATERIAL AND EQUIPMENT USE

MATERIAL USE

WM10 LIQUID WASTE MANAGEMENT

NS16 TEMPORARY BATCH PLANTS

NS15 DEMOLITION ADJACENT TO WATER

NS12 CONCRETE CURING

NS13 CONCRETE FINISHING

- ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND
- THE FOLLOWING BMPs AS OUTLINED IN, BUT NOT LIMITED TO, THE LATEST EDITION OF THE CALIFORNIA BMP HANDBOOK (CONSTRUCTION) OR CALTRANS STORMWATER QUALITY HANDBOOKS (CONSTRUCTION SITE BMP MANUAL), MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY THE PROJECT ENGINEER OR THE BUILDING OFFICAL):

### **EROSION CONTROL**

- EC1 SCHEDULING
- EC2 PRESERVATION OF EXISTING VEGETATION
- EC3 HYDRAULIC MULCH EC4 HYDROSEEDING
- EC5 SOIL BINDERS
- EC6 STRAW MULCH EC7 GEOTEXTILES & MATS
- EC8 WOOD MULCHING
- EC9 EARTH DIKES AND DRAINAGE SWALES
- EC10 VELOCITY DISSIPATION DEVICES EC11 SLOPE DRAINS
- EC12 STREAMBANK STABILIZATION EC13 RESERVED
- EC14 COMPOST BLANKETS
- EC15 SOIL PREPARATION\ROUGHENING

### EC16 NON-VEGETATED STABILIZATION

- **TEMPORARY SEDIMENT CONTROL**
- SE1 SILT FENCE SE2 SEDIMENT BASIN
- SE3 SEDIMRNT TRAP SE4 CHECK DAM
- SE5 FIBER ROLLS
- SE6 GRAVEL BAG BERM
- STREET SWEEPING AND VACUUMING SE8 SANDBAG BARRIER SE9 STRAW BALE BARRIER
- SE10 STORM DRAIN INLET PROTECTION
- SE11 ACTIVE TREATMENT SYSTEMS <del>`S</del>Ē12 TEMP<del>OR</del>ARY SILT DIK<del>E</del> SE13 COMPOST SOCKS & BERMS

### WIND EROSION CONTROL

SE14 BIOFILTER BAGS

WE1 WIND EROSION CONTROL

### **CATCH BASIN STENCIL DETAIL**

REVIEWED

STORM DRAIN SECTION

ALL CATCH BASINS AND INLETS THAT DISCHARGE INTO AN EXISTING OR PROPOSED STORM DRAIN MUST BE STENCILED TO DISCOURAGE ILLEGAL DUMPING OF POLLUTANTS. THIS STENCIL SHALL HAVE A MINIMUM DIAMETER OF 30 INCHES.

DATE

WM2

WM3

WM4

WM7

WM8

WM9



### HYDRAULIC ELEMENTS 50 YR. AND 25 YR. FREQUENCY

LINE	PIPE	REACH TO STA.	Q (CFS)	SECTION	VELOCITY	REMARKS
	FROM STA.	10 STA.	α (σ. σ)		(FPS)	

- \* ADD AN ADDITIONAL 1/2" OF CONCRETE OVER THE INVERT STEEL WHEN VEOCITIES ARE > 20 FPS
- \*\* ADD AN ADDITIONAL 1" OF CONCRETE OVER THE INVERT STEEL WHEN VELOCITIES ARE > 30 FPS
- \*\*\* ALL AN ADDITIONAL ½" OF CONCRETE OVER THE INVERT STEEL FOR

PIPE SIZE	RCP/NO RUBBER GASKET	RCP WITH RUBBER GASKET	TOTAL LENGTH
18"			
24"			
30"			
36"			
48"			
54"			
72"			
84"			_
TOTAL			

TOTAL SQ. FT. OF EASEMENT ACCUIRED = XXXX SQ. FT.

				STORM DRAIN PLANS	P.D. NO. XX	
REVISED BY	APPROVED BY	DATE	OFESSA	LOS ANGELES COUNTY PUBLIC WORKS		
			LE NEER'S NATELY			

**COMPANY NAME & ADDRESS** 

PROJECT ENGINEER

DATE | EIMP XXXXXXXXXX PH XXXXXXX IDDNO. XXXXXXXX | SHEET 1 OF XX

GENERAL NOTES AND HYDRAULIC ELEMENTS

FED ID XXXXXXX SHEET DESCRIPTION STORM DRAIN PLAN P.D. NO XXXXX LOS ANGELES COUNTY PUBLIC WORKS REVISED BY APPROVED BY COMPANY NAME & ADDRESS PROJECT ENGINEER DATE EIMP XXXXXXXXXX TRACT NO. XXXXXX DDNO. XXXXXXX SHEET 1 OF XX
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FED ID XXXXXXX STA. XX+XX TO STA. XX +XX STORM DRAIN PLAN P.D. NO. XXXXX LOS ANGELES COUNTY PUBLIC WORKS REVISED BY APPROVED BY COMPANY NAME & ADDRESS PROJECT ENGINEER DATE EIMP XXXXXXXXX TRACT NO, XXXX DDNO.XXXXXXXX SHEET 1 OF XX

DATE: 4/24/2019

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