

CITY OF TORRANCE, CALIFORNIA

ADDENDUM NO. 2

Issued: February 29, 2012

TO

**PROPOSAL, SPECIFICATIONS, BOND AND
AFFIDAVIT FOR THE CONSTRUCTION
OF**

**WESTERN AVENUE AND ROLLING HILLS ROAD WATER MAIN REPLACEMENT PROJECT, CIP
No. I-107 AND RECYCLED WATER RETROFITS FOR ANZA AVENUE MEDIANS AND PARKS
PROJECT, CIP No. I-78
B2012-01**

Note the following changes and/or additions to the Plans and Specifications for the project indicated above. The bidder shall execute the Certification at the end of this addendum, and shall **attach all pages of this addendum to the Contract Documents submitted with the Bid**. In addition, the bidder shall complete and submit the "Acknowledgment of Addenda Received" Form provided in Section C of the Specifications.

1. Refer to Specifications SECTION C – BIDDERS'S PROPOSAL

- Add to the current Bidder's Proposal:
BID SCHEDULE A – ALTERNATIVE A
BID SCHEDULE A – ALTERNATIVE B

Note: Contract shall be awarded to lowest price bid alternate. Contractor need only submit one BID SCHEDULE A

- Replace the current Bidder's Proposal **BID SCHEDULE B** with attached BID SCHEDULE B – REVISION 1

2. Replace drawings for:

- a) Victor Park – Sheet 1 of 5
Sheet 2 of 5
Sheet 3 of 5
Sheet 4 of 5

- b) Paradise Park – Sheet 2 of 4
Sheet 3 of 4
Sheet 4 of 4

c) La Paloma Park - Sheet 2 of 4

Sheet 3 of 4

Sheet 4 of 4

3. SPECIAL PROVISIONS

Add the following:

Section 207-24 – CURED-IN-PLACE PIPE FOR POTABLE WATER AND PRESSURE PIPELINES

By Order of the Public Works Director
ROBERT J. BESTE

A handwritten signature in black ink, appearing to read "John Dettle". The signature is written in a cursive style with a long horizontal stroke extending to the right.

JOHN DETTLE, P.E.
Engineering Manager

BIDDER'S CERTIFICATION

I acknowledge receipt of the foregoing Addendum No. 2 and accept all conditions contained therein.

Bidder

By

Date

******* Submit this executed form with the bid *******

**Please fill out and submit the
"Acknowledgment of Addenda Received" form
provided in Section C of the Specifications.**

BIDDER'S PROPOSAL

Company: _____ Total Bid: _____

**PROPOSAL, SPECIFICATIONS, BOND AND AFFIDAVIT FOR THE CONSTRUCTION OF
WESTERN AVENUE AND ROLLING HILLS ROAD
WATER MAIN REPLACEMENT PROJECT, CIP No. I-107 AND
RECYCLED WATER RETROFITS FOR THE ANZA AVENUE MEDIANS
AND PARKS PROJECT, CIP No. I-78
B2012-01**

Honorable Mayor and Members
of the Torrance City Council
Torrance, California

Members of the Council:

In accordance with the Notice Inviting Bids pertaining to the receiving of sealed proposals by the City Clerk of the City of Torrance for the above titled improvement, the undersigned hereby proposes to furnish all Work to be performed in accordance with the Plans, Specifications, Standard Drawings, and the Contract Documents, for the unit price or lump sum set forth in the following schedule.

**BID SCHEDULE A – ALTERNATIVE A
WESTERN AVENUE AND ROLLING HILLS ROAD
WATER MAIN REPLACEMENT PROJECT**

Item	Quantity	Unit	Description	Unit Price	Total Bid
1	1	LS	Mobilization/Demobilization (5%).	\$ _____	\$ _____
2	1	LS	Furnish and install excavation safety measures, including adequate sheeting, shoring and bracing or equivalent methods for the protection of life and limb for construction of water mains and appurtenances per Section 6707 of California Labor Code.	\$ _____	\$ _____
3	4,231	LF	Furnish and install 12" inch diameter ductile iron pipe, CL-350, including fittings, thrust blocks, restrained joints, backfill per City Std. No. T701, potholing, replacing control detector loops, AC pavement replacement, restoration of surface features, dewatering and disposal of water, pressure and disinfection testing, and all appurtenances required for a complete system, in accordance with the plans and specifications and standard drawings.	\$ _____	\$ _____

4	404	LF	Furnish and install 8" inch diameter ductile iron pipe, CL-350, including fittings, thrust blocks, restrained joints, backfill per City Std. No. T701, potholing, replacing control detector loops, AC pavement replacement, restoration of surface features, dewatering and disposal of water, pressure and disinfection testing, and all appurtenances required for a complete system, in accordance with the plans and specifications and standard drawings.	\$ _____	\$ _____
5	282	LF	Furnish and install 6 inch diameter ductile iron pipe, CL-350, including fittings, thrust blocks, restrained joints, backfill per City Std. No. T701, potholing, replacing control detector loops, AC pavement replacement, restoration of surface features, dewatering and disposal of water, pressure and disinfection testing, and all appurtenances required for a complete system, in accordance with the plans and specifications and standard drawings	\$ _____	\$ _____
6	117	LF	Furnish and install 20 inch Steel Casing Per City of Torrance Std. No. T715, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
7	1	EA	Provide Jacking Pit for jacking operation duration including drilling, reaming and installing of steel casing, backfill of pit, AC pavement replacement, and restoration of surface features, in accordance with plans, specifications and standard drawings.	\$ _____	\$ _____
8	1	EA	Provide Receiving Pit for jacking operation duration including drilling, reaming and installing of steel casing, backfill of pit, AC pavement replacement, and restoration of surface features, in accordance with plans, specifications and standard drawings.	\$ _____	\$ _____
9	12	EA	Furnish and install 12 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
10	1	EA	Furnish and install 10 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
11	4	EA	Furnish and install 8 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
12	2	EA	Furnish and install 6 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
13	2	EA	Furnish and install 4 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____

14	8	EA	Remove And Replace Existing Service Meter and Meter Boxes Per City Of Torrance Std. No. T702, T703 And T704 (Size To Be Verified)	\$ _____	\$ _____
15	8	EA	Furnish and install Fire Hydrant Assemblies including valve and piping per City Std. No. T706 in accordance with plans, specifications, and standard drawings.	\$ _____	\$ _____
16	1	EA	Furnish and install Air and Vacuum Release Valve including piping per City Std. No. T708 in accordance with plans, specifications and standard drawings.	\$ _____	\$ _____
17	1,950	SY	Remove and dispose portion of existing Western Ave Structural Section and Unclassified Materials to a depth of 6-Inches in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
18	1,950	SY	Construct 2-inches Asphalt Concrete (C2-PG64-10) Over 4-inches Asphalt Concrete (B-PG64-10) Over Compacted Sub-grade over portion of Western Ave in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
19	1,725	SY	Grind portion of existing Western Ave Section to a depth of 3-inches in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
20	1,725	SY	Construct 3-inches Asphalt Concrete (C2-PG64-10) over portion of Western Ave in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
21	6,556	SY	Apply Type II Slurry in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
22	1	LS	Install Traffic Striping, Pavement Marking and Curb Marking, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
23	1	LS	Furnish and install Traffic Control measures including: obtaining approvals and permits of plans, install Temporary Pavement Markers and delineation, install delineators, cones, signs, flashing arrow board, flag man, install temporary and permanent pavement markings and signs, restoration of striping, steel plating, lights for night work, and modifications to traffic signals in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
24	1	LS	Caltrans and LACDPW Permit and Fees	\$ _____	\$ _____
25	2	EA	Provide and Install Project Construction Signs Per City Std. No. T503.	\$ _____	\$ _____
26	4	EA	Provide Portable Changeable Message Signs (PCMS), in accordance with plans, specifications and standard drawings	\$ _____	\$ _____

27	1	LS	Install damaged Curb, Gutter, and Sidewalk to match existing, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
28	1	LS	Abandon Valves, Hydrants, Blow off Assemblies, other Appurtenances, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
29	1	LS	Prepare SWPPP-WPC Manual 2011, Erosion and Sediment Control Plan, submit NOI and NOT to meet NPDES Compliance and BMPs	\$ _____	\$ _____
30	500	CY	Crushed rock to replace unsuitable trench bottom material, including import, haul, compaction, complete. This is an allowance	\$25/cy	\$12,500

TOTAL BID PRICE FOR SCHEDULE A – ALTERNATIVE A: \$ _____
 (Figures)*

TOTAL BID PRICE FOR SCHEDULE A – ALTERNATIVE A: _____
 (Words)*

**BID SCHEDULE A – ALTERNATIVE B
WESTERN AVENUE AND ROLLING HILLS ROAD
WATER MAIN REPLACEMENT PROJECT
Cured-In-Place Pipe**

Item	Quantity	Unit	Description	Unit Price	Total Bid
1	1	LS	Mobilization/Demobilization (5%).	\$ _____	\$ _____
2	1	LS	Furnish and install excavation safety measures, including adequate sheeting, shoring and bracing or equivalent methods for the protection of life and limb for construction of water mains and appurtenances per Section 6707 of California Labor Code.	\$ _____	\$ _____
3	3,716	LF	Furnish and install 12" inch diameter ductile iron pipe, CL-350, including fittings, thrust blocks, restrained joints, backfill per City Std. No. T701, potholing, replacing control detector loops, AC pavement replacement, restoration of surface features, dewatering and disposal of water, pressure and disinfection testing, and all appurtenances required for a complete system, in accordance with the plans and specifications and standard drawings.	\$ _____	\$ _____
4	404	LF	Furnish and install 8" inch diameter ductile iron pipe, CL-350, including fittings, thrust blocks, restrained joints, backfill per City Std. No. T701, potholing, replacing control detector loops, AC pavement replacement, restoration of surface features, dewatering and disposal of water, pressure and disinfection testing, and all appurtenances required for a complete system, in accordance with the plans and specifications and standard drawings.	\$ _____	\$ _____
5	282	LF	Furnish and install 6 inch diameter ductile iron pipe, CL-350, including fittings, thrust blocks, restrained joints, backfill per City Std. No. T701, potholing, replacing control detector loops, AC pavement replacement, restoration of surface features, dewatering and disposal of water, pressure and disinfection testing, and all appurtenances required for a complete system, in accordance with the plans and specifications and standard drawings.	\$ _____	\$ _____
6	1	LS	Excavation and backfill of access/closure pits to water main line, including shoring, dewatering and disposing of water per NPDES permit and in accordance with plans, specifications for CIPP.	\$ _____	\$ _____

7	1	LS	Cleaning of existing water main. Closed Circuit Television (CCTV) for pre and post inspection of water main for CIPP.	\$ _____	\$ _____
8	580	LF	Lining of 12 inch cast iron pipe with Cured-In-Place Pipe (CIPP) FROM STA 9+35 to 15+15 installation of mechanical end seals, Hi-Lining installation and removal to two services on Del Amo Bl, Hydrostatic Pressure Test and chlorination of water main in accordance with plans, specifications	\$ _____	\$ _____
9	12	EA	Furnish and install 12 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
10	1	EA	Furnish and install 10 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
11	4	EA	Furnish and install 8 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
12	2	EA	Furnish and install 6 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
13	2	EA	Furnish and install 4 inch RW Gate Valve, including valve box assembly per City Std. No. T712, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
14	8	EA	Remove And Replace Existing Service Meter and Meter Boxes Per City Of Torrance Std. No. T702, T703 And T704 (Size To Be Verified)	\$ _____	\$ _____
15	8	EA	Furnish and install Fire Hydrant Assemblies including valve and piping per City Std. No. T706 in accordance with plans, specifications, and standard drawings.	\$ _____	\$ _____
16	1	EA	Furnish and install Air and Vacuum Release Valve including piping per City Std. No. T708 in accordance with plans, specifications and standard drawings.	\$ _____	\$ _____
17	1,950	SY	Remove and dispose portion of existing Western Ave Structural Section and Unclassified Materials to a depth of 6-Inches in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
18	1,950	SY	Construct 2-inches Asphalt Concrete (C2-PG64-10) Over 4-inches Asphalt Concrete (B-PG64-10) Over Compacted Sub-grade over portion of Western Ave in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
19	1,725	SY	Grind portion of existing Western Ave Section to a depth of 3-inches in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____

20	1,725	SY	Construct 3-inches Asphalt Concrete (C2-PG64-10) over portion of Western Ave in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
21	6,556	SY	Apply Type II Slurry in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
22	1	LS	Install Traffic Striping, Pavement Marking and Curb Marking, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
23	1	LS	Furnish and install Traffic Control measures including: obtaining approvals and permits of plans, install Temporary Pavement Markers and delineation, install delineators, cones, signs, flashing arrow board, flag man, install temporary and permanent pavement markings and signs, restoration of striping, steel plating, lights for night work, and modifications to traffic signals in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
24	1	LS	Caltrans and LACDPW Permit and Fees	\$ _____	\$ _____
25	2	EA	Provide and Install Project Construction Signs Per City Std. No. T503.	\$ _____	\$ _____
26	4	EA	Provide Portable Changeable Message Signs (PCMS), in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
27	1	LS	Install damaged Curb, Gutter, and Sidewalk to match existing, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
28	1	LS	Abandon Valves, Hydrants, Blow off Assemblies, other Appurtenances, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
29	1	LS	Prepare SWPPP-WPC Manual 2011, Erosion and Sediment Control Plan, submit NOI and NOT to meet NPDES Compliance and BMPs	\$ _____	\$ _____
30	500	CY	Crushed rock to replace unsuitable trench bottom material, including import, haul, compaction, complete. This is an allowance	\$25/cy	\$12,500

TOTAL BID PRICE FOR SCHEDULE A – ALTERNATIVE B : \$ _____
 (Figures)*

TOTAL BID PRICE FOR SCHEDULE A - ALTERNATIVE B: _____
 (Words)*

**BID SCHEDULE B – REVISION 1
 RECYCLED WATER RETROFITS FOR
 ANZA AVENUE MEDIANS AND PARKS PROJECT**

Anza Avenue Medians					
Item	Quantity	Unit	Description	Unit Price	Total Bid
1	2	EA	Install 2 inch Recycled Water Meter and other Appurtenances, and in accordance with plans, specifications and standard drawings (meter provided by CWSC)	\$ _____	\$ _____
2	3	EA	Install 2 inch Recycled Water Meter and other Appurtenances, and in accordance with plans, specifications and standard drawings (meter provided by City of Torrance)	\$ _____	\$ _____
3	2	EA	Install 1 inch Recycled Water Meter and other Appurtenances, and in accordance with plans, specifications and standard drawings (meter provided by City of Torrance)	\$ _____	\$ _____
4	5	EA	Furnish and Install 2 inch PRV, 2 inch Wye-Strainer and other Appurtenances, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
5	2	EA	Furnish and Install 1 inch PRV, 1 inch Wye-Strainer, and other Appurtenances, and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
7	1	LS	Construct Lateral to Connect East Medians Meter to Recycled Water Stub in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
8	8	EA	Remove Existing Backflow Devices in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
9	20	EA	Remove Hose Bib Connections and Cap Below Ground (Median North of Sepulveda) in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
10	1	LS	Repair Damaged Landscape and Sidewalk in accordance with plans, specifications and standard drawings	\$ _____	\$ _____

11	34	EA	Furnish and Install Recycled Water Signs in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
12	1	LS	Furnish and Install Identification RW Tagging and Marking in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
13	3	EA	Abandon Existing 1 inch Potable Water Meter in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
14	2	EA	Abandon Existing 2 inch Potable Water Meter in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
15	1	LS	Furnish Traffic Control Plans and install Traffic Control measures including: obtaining approvals and permits of plans, delineators, cones, signs, flashing arrow board, flag man, install temporary and permanent pavement markings and signs, restoration of striping, in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____

Sub-Total for Anza Avenue Medians

\$ _____

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SEA SIDE HEROES PARK					
Item	Quantity	Unit	Description	Unit Price	Total Bid
1	1	LS	Install 2 inch Recycled Water Meter and 2 inch Recycled Water Service Connection and other Appurtenances in accordance with plans, specifications and standard drawings (meter provided by City of Torrance)	\$ _____	\$ _____
2	1	LS	Furnish and Install 2 inch PRV, 2 inch Wye-Strainer and Protective Enclosures and other Appurtenances in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
3	35	LF	Furnish and Install 2 inch Purple PVC Pipe in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
4	1	LS	Remove Existing Backflow Devices in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
5	6	EA	Remove Flush Valve and Replace with RW Quick Coupler in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
6	1	LS	Remove and replace Sidewalk in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
7	10	EA	Furnish and Install Identification RW Tagging and Marking in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
8	1	LS	Repair Damaged Landscape and Irrigation in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
9	1	EA	Abandon Existing 2 inch Potable Water Meter in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
10	1	LS	Furnish Traffic Control Plans and install Traffic Control measures including: obtaining approvals and permits of plans, delineators, cones, signs, flashing arrow board, flag man, install temporary and permanent pavement markings and signs, restoration of striping, in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____

Sub-Total for Sea Side Heroes Park

\$ _____

LA PALOMA PARK					
Item	Quantity	Unit	Description	Unit Cost	Total Cost
1	1	LS	Connect to RW stub-out and Install New 1 ½ inch RW Meter and Meter Box in accordance with the plans, specification and standard drawings (Meter to be provided by City of Torrance)	\$ _____	\$ _____
2	1	LS	Furnish and Install 1 ½ inch Pressure Reducing Valve Assembly and 1 ½ inch Wye-Strainer assembly in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
3	50	LF	Furnish and Install 1 ½ inch Purple PVC Pipe (CL 315) from New 1 ½ inch RW Meter and Connect to Existing Irrigation Main in accordance with the plans, specification and standard drawings.	\$ _____	\$ _____
4	1	LS	Repair Damaged Landscape and Irrigation in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
5	3	EA	Furnish and Install Recycled Water Signs and in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
6	25	EA	Furnish and Install Identification RW Tagging and Marking in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
7	1	LS	Concrete Repair in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
8	18	EA	Remove Potable Water Quick Coupler and Replace with Recycled Water Quick Coupler in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
9	1	EA	Abandon Existing 1 ½ inch Potable Water Meter in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
10	105	LF	Construct Concrete Mow Curb in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
11	35	CY	Place 4 inch thick of Decomposed Granite in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
12	3	CY	Construct 4 ft x 4 ft x 4 inch thick and 8 ft x 10 ft x 4 inch thick with 5/8 inch rebar concrete pads in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
13	1	LS	Relocate Picnic Tables, Trash Can, and BBQ in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
14	1	LS	Abandon Sprinkler Heads in New Picnic area in accordance with plans, specifications and standard drawings	\$ _____	\$ _____

Sub-Total for La Paloma Park

\$ _____

PARADISE PARK					
Item	Quantity	Unit	Description	Unit Cost	Total Cost
1	1	LS	Install 3 inch RW Meter and Meter Box in accordance with plans, specifications and standard drawings (Meter to be provided by California Water Service Company)	\$ _____	\$ _____
2	1	LS	Furnish and Install 3 inch Pressure Reducing Valve (PRV) Assembly in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
3	1	LS	Furnish and Install 3 inch Purple PVC Pipe (CL 315) from 3 inch RW meter to PRV and from PRV to existing Irrigation backbone in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
4	1	LS	Install 1 inch PW Meter in accordance with plans, specifications and standard drawings (Meter to be provided by California Water Service Company)	\$ _____	\$ _____
5	1	LS	Furnish and Install 1 inch Reduced Pressure Assembly (Sinks and Drinking Fountain) in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
6	1	LS	Furnish and Install 1 inch Reduced Pressure Assembly (Restrooms) in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
7	1	LS	Repair Damaged Landscape and Sidewalk in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
8	1	LS	Remove Existing 3 inch backflow Assembly in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
9	1	LS	Remove Existing Fire Hydrant and Plug Valve and Construct Cap and thrust block below ground in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
10	1	LS	Remove existing 3 inch Potable Water Meter and abandon existing Potable Water service lateral at the CWSC Potable Water main in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
11	60	LF	Construct Concrete Mow Strip in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
12	5	EA	Furnish and Install Recycled Water Signs in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
13	1	LS	Furnish and Install Identification Recycled Water Tagging and Marking in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
14	1	LS	Furnish and Install Identification Potable Water Tagging and Marking in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
15	4	EA	Furnish and Install Hose Bib Vacuum Breakers in accordance with plans, specifications and standard drawings	\$ _____	\$ _____

16	21	EA	Remove Existing PW Quick Couplers and Replace w/ RW Quick Couplers in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
17	120	LF	Construct Concrete Mow Strip in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
18	31	CY	Place 4 inch Decomposed Granite in Picnic Areas in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
19	6	EA	Relocate and Replace Existing Rotors in accordance with plans, specifications and standard drawings	\$ _____	\$ _____

Sub-Total for Paradise Park

\$ _____

VICTOR PARK					
Item	Quantity	Unit	Description	Unit Cost	Total Cost
1	1	LS	Furnish and Install 4 Inch Purple PVC Pipe from New 3 Inch RW Meter and Connect to Existing Irrigation Main in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
2	1	LS	Remove Existing 3 Inch RP Assembly in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
3	1	LS	Furnish and Install 2 Inch RP Assembly (Onyx Street) in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
4	1	LS	Repair Damaged Landscape and Sidewalk in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
5	1	LS	Connect to RW stub out and Install New 3 Inch RW Meter and Meter Box (Meter to be provided by California Water Service Company) in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
6	3	EA	Furnish and Install Hood Over Drinking Fountain in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
7	10	EA	Furnish and Install Recycled Water Signs in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
8	29	EA	Furnish and Install Identification Recycled Water Tagging and Marking in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
9	8	EA	Furnish and Install Identification Potable Water Tagging and Marking in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
10	8	EA	Remove Existing PW Quick Couplers and Replace w/ RW Quick Couplers in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
11	1	LS	Furnish and Install 3 Inch Pressure Reducing Valve Assembly (PRV) in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
12	480	LF	Construct Concrete Mow Strip in accordance with plans, specifications and standard drawings		
13	100	CY	Place 4 inch Decomposed Granite in Picnic Areas in accordance with plans, specifications and standard drawings		
14	130	EA	Remove and Salvage existing Sprinkler Heads in Picnic Area in accordance with plans, specifications and standard drawings		
15	9	EA	Cap existing irrigation Control Valves in Picnic Area in accordance with plans, specifications and standard drawings		

Sub-Total for Victor Park

\$ _____

Modifications at Library					
Item	Quantity	Unit	Description	Unit Cost	Total Cost
1	1	LS	Furnish and Install 2 inch RP after Existing 2 inch PW Meter in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
2	1	LS	Remove Existing 2 Inch Vacuum Breaker Valve Assembly in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
3	6	EA	Furnish and Install Identification Recycled Water Tagging and Marking in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
4	1	EA	Furnish and Install Identification Potable Water Tagging and Marking in accordance with plans, specifications and standard drawings	\$ _____	\$ _____
5	1	LS	Modifications directed by DOHS	\$40,000	\$40,000

Sub-Total for Modifications at Library

\$ _____

TOTAL BID PRICE FOR SCHEDULE B – REVISION 1 : \$ _____
 (Figures)*

TOTAL BID PRICE FOR SCHEDULE B – REVISION 1 : _____
 (Words)*

TOTAL BID PRICE FOR SCHEDULE A – ALTERNATIVE A OR ALTERNATIVE B
AND SCHEDULE B – REVISION 1 :

\$ _____
(Figures)*

TOTAL BID PRICE FOR SCHEDULE A - ALTERNATIVE A OR ALTERNATIVE B
AND SCHEDULE B – REVISION 1 :

(Words)*

***BID MAY BE REJECTED IF TOTAL IS NOT SHOWN IN FIGURES AND WORDS.**

B2012-01

SECTION 207-24 CURED-IN-PLACE PIPE FOR POTABLE WATER AND PRESSURE PIPELINES

207-24.1 GENERAL

207-24.1.0 SUMMARY

It is the intent of this specification to provide for the structural repair and for the corrosion protection of pipelines through the installation of a resin-impregnated flexible tube, which is tightly formed to the original conduit. The resin is cured using either hot water under hydrostatic pressure or steam pressure within the tube. The Cured-In-Place Pipe (CIPP) will be continuous and tight fitting.

The Contractor shall furnish all materials for the cured-in-place pipe (CIPP), in accordance with the provisions of the Contract Documents.

This specification pertains to the lining of the existing 6"– 48" diameter host pipes.

207-24.1.1 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

American Society for Testing and Materials (ASTM):

ASTM F1216: Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube

ASTM F1743: Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)

ASTM D5813: Cured-in-Place Thermosetting Resin Sewer Pipe

ASTM D790: Test Methods for Flexural Properties of Un-reinforced and Reinforced Plastics and Electrical Insulating Materials

D2990: Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics

AWWA M28: Manual on Rehabilitation of Water Mains

NSF/American National Standards Institute (ANSI):

NSF/ANSI 61: Drinking Water Components

207-24.1.2 SUBMITTALS

Product Data: Furnish manufacturer's technical data for cured-in-place pipe (CIPP), including installation instructions, independent laboratory test results, and handling and storage instructions prior to installation.

Quality Assurance Submittals:

Manufacturer's written letter of certification identifying Contractor as a licensed installer.

ANSI/NSF Standard 61 Certificate for the proposed system where applicable.

Certificate of Compliance with Standards listed in sections 207-24.1.1

Video inspection equipment and recording method(s)

Design Calculations prepared and stamp by a Professional Engineer.

Resin yield calculations per unit length for each diameter and thickness of Tubes specified. The calculations should show compliance with 207-24.3.2., of this specification.

Where applicable, a suitable by-pass and temporary water service plan for affected customers along with the disinfection procedure.

207-24.1.3 QUALITY ASSURANCE

The pipe lining materials shall be NORDIPIPE™ as manufactured and supplied by SEKISUI NordiTube, Inc. of Hammond, Louisiana, InsituGuard^R as manufactured and supplied by Insituform Technologies LLC of St. Louis, Missouri or Engineer approved equal. Only structural pipe lining materials in conformance with the requirements of ASTM F1216 shall be considered as an "or equal" for this item.

The Contractor and/or his subcontractor must be properly licensed by the liner manufacturer to perform the rehabilitation work.

The Contractor and/or his subcontractor shall not have less than 3 years of active experience in the installation of CIPP liners and shall have completed projects of similar size as required for this project.

207-24.2 PRODUCTS

207-24.2.1 MATERIALS

Tube:

The flexible tube shall consist of one or more layers of absorbent woven or non woven felt fabric or a combination thereof with composite reinforcement material that meets the requirements of ASTM F1216, Section 5.1 or ASTM F1743, Section 5.2.1 The tube shall be constructed to withstand installation pressures and stretch to fit irregular pipe sections. The cured-in-place pipe shall be designated as an AWWA Class IV fully-structural/independent CIPP system in accordance with AWWA M28 Manual on Rehabilitation of Water Mains.

The resin impregnated tube shall have a relatively uniform thickness that when compressed at installation pressures will equal or exceed the calculated minimum design thickness.

The tube shall be manufactured to a size that when installed will tightly fit the internal circumference and length of the original pipe. Allowance shall be made for circumferential stretching during inversion.

The outside layer of the tube shall be coated with an impermeable, flexible membrane that will contain the resin and be compatible with the resin system used.

The tube shall contain no encapsulated elastomeric layers. No dry or unsaturated layers shall be evident after installation.

The wall color of the interior pipe surface of CIPP after installation shall be a relatively light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made.

Seams shall meet the minimum strength requirements of ASTM D-5813 Subsection 6.1.

The tube shall be marked for distance at regular intervals along its entire length, not to exceed 5 feet. Such markings shall include the Manufacturers name or identifying symbol. Where applicable, the tube shall be marked "NSF 61" in accordance with the NSF protocol.

Resin:

The resin system shall be thermoset polyester, vinyl ester or epoxy system including all required catalysts, initiators or hardeners that when cured within the tube creates a composite that satisfies the requirements of ASTM F1216 and ASTM F1743 and the physical properties of the project. The resin shall produce a CIPP that will comply with the structural and chemical resistance requirements of this specification.

The resin for CIPP for potable water applications must be ANSI/NSF 61-approved or equivalent.

The resin for raw or non-potable water must meet applicable corrosion resistance requirements.

Pressure Rating:

The pressure rating of the installed CIPP system shall be suitable for the application per the applicable design mode in ASTM F1216 Appendix X1, Section X1.3.

207-24.2.2 STRUCTURAL REQUIREMENTS

The CIPP shall be designed as per ASTM F1216, Appendix X1. Section X.1.3. The CIPP design shall assume no bonding to the original pipe wall.

The layers of the cured CIPP shall be suitably bonded. It shall not be possible to separate any two layers of the CIPP with a probe or point of a knife blade so that layers separate cleanly or the probe or knife blade moves freely between the layers. If the layers separate during field sample testing, new samples will be required to be obtained from the installed pipe. Any reoccurrence may cause rejection of work.

Any layers of the tube that are not saturated with resin prior to insertion into the existing pipe shall not be included in the structural CIPP wall thickness computation.

The initial CIPP structural properties shall meet the minimum values in ASTM F 1216, *TABLE 1 CIPP Initial Structural Properties* or the values as used in the design.

207-24.2.3 DESIGN PARAMETERS

The design of the pipe lining shall be based on the following parameters, unless otherwise specified by the Owner:

Diameter	12" nominal ID
Internal Operating Pressure	120 psi
Internal Vacuum, if applicable	14.7 psi
Minimum Operating Temperature	50°F
Soil Depth (above top of pipe)	6-9 feet-verify with test pits
Soil Modulus	1000 psi
Ground Water Depth (above invert)	2 feet
Safety Factor	2
Design Condition	Partially/Fully Deteriorated
Live Loads	H20

MINIMUM PHYSICAL PROPERTIES

Property	ASTM Test Method	Minimum Value*
Flexural Modulus of Elasticity	D790	250,000 psi
Flexural Strength	D790	4,500 psi
Tensile Strength	D638	3,000 psi

*Values are for design conditions @ 75°F (25°C)

207-24.2.4 PERFORMANCE REQUIREMENTS

Chemical Resistance: The CIPP shall meet the chemical resistance requirements of the application. For sewers, the chemical resistance requirements shall meet ASTM F1216, Appendix X2.

Hydraulic Capacity: Overall, the hydraulic cross-section shall be maintained as large as possible. The CIPP shall have a minimum of the full flow capacity of the original pipe before rehabilitation. The calculated flow capacities should be derived by using a commonly accepted roughness coefficient (Hazen Williams) for the liner material and the existing host pipe material taking into consideration of its age and condition.

207-24.3 EXECUTION

207-24.3.1 EXAMINATION

Cleaning Pipe Lines: The Contractor shall remove all internal debris and tuberculation from the host pipe line that will interfere with the installation of CIPP or be detrimental to the final product. A video inspection shall confirm the adequacy of the cleaning.

Obstructions: All obstructions that could be detrimental to the structural integrity of the pressure pipe shall be noted and brought to the attention of the Buyer.

Appentitures: All valves, tees, services and so on shall be noted on an inspection log. A recorded video inspection is standard practice unless otherwise pre-approved by the Buyer.

207-24.3.2 INSTALLATION

CIPP installation shall be in accordance with ASTM F1216, Section 7, or ASTM F1743, Section 6, with the following modifications:

- 1) **Resin Impregnation:** The quantity of resin used for tube impregnation shall be sufficient to fill the volume of air voids in the tube with additional allowances for

polymerization shrinkage and the loss of resin during installation through irregularities in the original pipe wall.

A vacuum impregnation process should be used that will sufficiently saturate the tube. The leading edge of the resin slug shall be as near to perpendicular to the longitudinal axis of the tube as possible. A roller system shall be used to uniformly distribute and meter the resin throughout the tube.

- 2) **Tube Insertion:** The wet out tube shall be positioned in the pipeline using either water or air inversion. The tube should be inverted through an existing manhole or approved access point and fully extend to the next designated manhole or termination point.
- 3) Temperature gauges shall be placed between the tube and the host pipe insertion and termination locations to monitor the temperatures during the cure cycle.
- 4) Curing shall be accomplished by utilizing circulated hot water under hydrostatic pressure or air/steam pressure in accordance with the manufacturer's recommended cure schedule.
- 5) Upon completion of the insertion and curing of the CIPP, NSF/ANSI 61 approved WEKO-Seal type seals or equal will be installed at terminal ends according to the manufacturer's recommendations. Lined pipe and unlined pipe shall be connected with mechanical joints.

207-24.3.3 ACCEPTANCE TESTING

CIPP flat plate samples shall be prepared and physical properties tested in accordance with ASTM F1216 or ASTM F1743 per the manufacturer's recommendations.

Wall thickness of samples shall be determined as described in paragraph 8.1.6 of ASTM F1743. The minimum wall thickness at any point shall not be less than the minimum design wall thickness as calculated in section 2.02 above.

Inspection of the CIPP shall be in accordance with ASTM F1743, Section 8.6.

When required a hydrostatic pressure test shall be performed according to ASTM F1216, Section 8.3.

When required by the Owner of the potable water pipes, a disinfection procedure according to applicable AWWA Standards or local construction standards and a suitable laboratory test conducted on a water sample to confirm compliance.

207-24.3.4 ACCEPTANCE

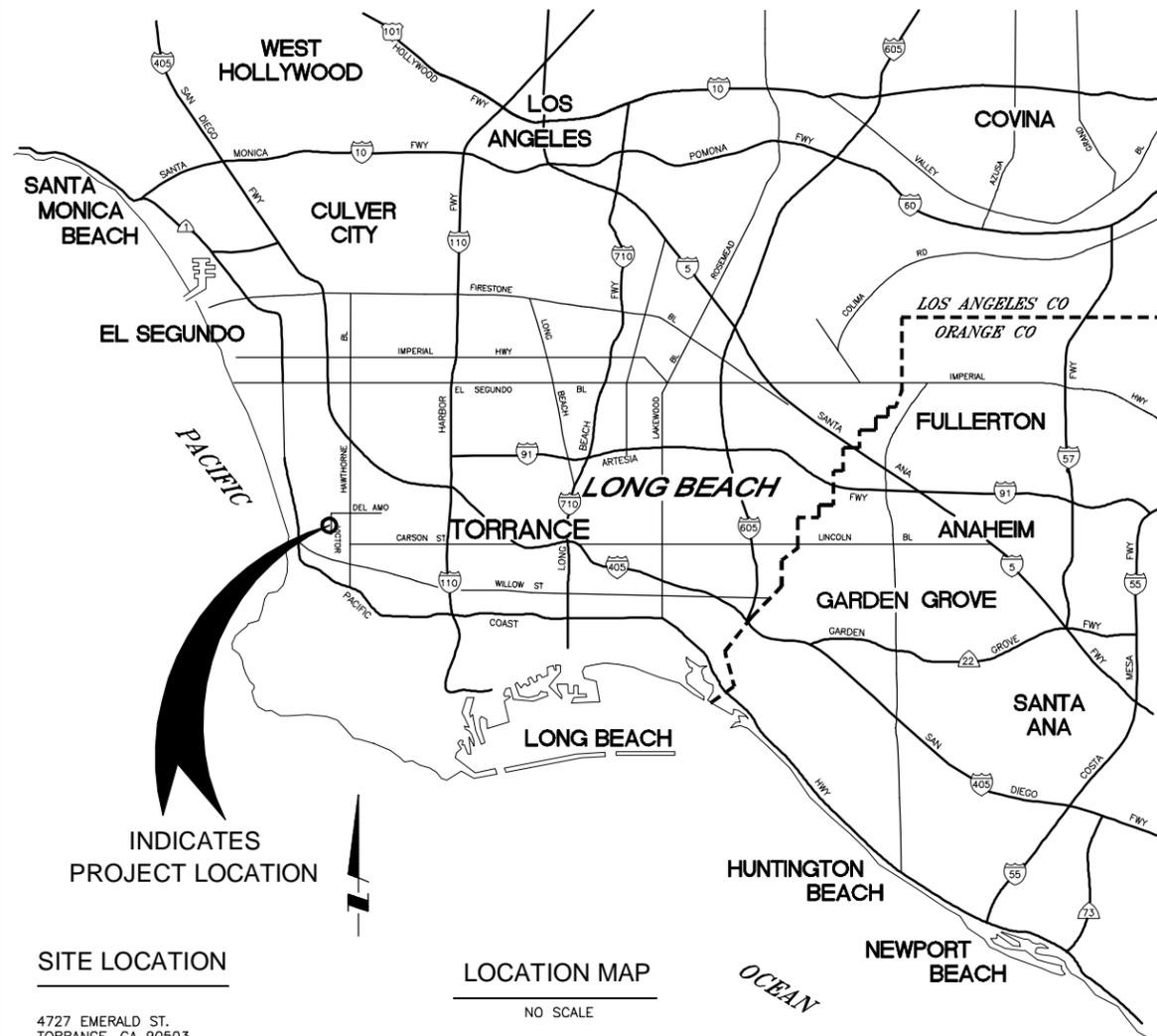
The CIPP shall be deemed acceptable when the installation is performed according to Section 207-24.3.2 and the applicable tests according to Section 207-24.3.3 are satisfied.

207-24.4 PAYMENT

There shall be no separate payment for installation of lining of cast iron pipe with CIPP. Full compensation for furnishing all labor, materials, tools, equipment and incidentals, installation of mechanical end seals, mechanical joints for connection to unlined pipe, dewatering and disposal of water, hydrostatic pressure test and disinfection of water main and for doing all the work involved in furnishing and installing CIPP complete in place as specified in these Special Provision shall be included in the Contract Unit Price for Installation of lining for 12 inch cast iron pipe with CIPP.

WEST BASIN MUNICIPAL WATER DISTRICT

RECYCLED WATER CUSTOMER DEVELOPMENT ON-SITE RETROFIT FACILITIES VICTOR PARK TORRANCE, CA JANUARY 2012



INDICATES
PROJECT LOCATION

SITE LOCATION

4727 EMERALD ST.
TORRANCE, CA 90503

LOCATION MAP

NO SCALE

CONTACTS

OWNER AND SITE SUPERVISOR:	CITY OF TORRANCE MIKE WILSON, PARK SERVICES MANAGER	(310) 781-6901
WATER PURVEYOR:	CALIFORNIA WATER SERVICES COMPANY GEORGE COOK	(310) 420-8603
WEST BASIN MUNICIPAL WATER DISTRICT:	FRANK FUCHS, PROJECT MANAGER	(310) 660-6255
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC HEALTH:	CARLOS BORJA	(626) 430-5295

SHEET INDEX

SHEET	DESCRIPTION
1	GENERAL INFORMATION
2	SITE PLAN
3	SITE DETAILS
4	SITE DETAILS
5	DPH RECYCLED WATER GUIDELINES

SYMBOLS AND ABBREVIATIONS

	RECYCLED WATER BOUNDARY AREA
	PROPERTY LINE
	EXIST. POTABLE WATER LINE
	EXIST. SEWER
	EXIST. RECYCLED WATER LINE
	EXIST. RECYCLED WATER MAIN IRRIGATION LINE
	EXIST. RECYCLED WATER IRRIGATION LATERAL
	EXIST. SEWER
	EXIST. OIL
	EXIST. METER
	EXIST. REDUCED PRESSURE PRINCIPLE DEVICE BACKFLOW PREVENTER
	EXIST. DRINKING FOUNTAIN
	EXIST. ELECTRIC CONTROL VALVE
	EXIST. QUICK COUPLING VALVE
	EXIST. HOSE BIB
	EXIST. GATE VALVE
	EXIST. VACUUM BREAKER
	PRESSURE REDUCING VALVE (PRV)
	EXIST. STATION IRRIGATION CONTROLLERS - HYDRAULIC (1,2,3...) CONTROLLERS - ELECTRIC (A,B,C...)
	CAP
	FIRE HYDRANT
	RECYCLED WATER SIGN
	TRASH CAN
CWSC	CALIFORNIA WATER SERVICE COMPANY
D.I.	DUCTILE IRON
DPH.	DEPARTMENT OF PUBLIC HEALTH
DWG.	DRAWING
EXIST.	EXISTING
F.H.	FIRE HYDRANT
FLG.	FLANGED
MV.	MANUAL VALVE
MIN.	MINIMUM
NO.	NUMBER
PE.	PLAIN END
PO.	PUSH-ON
PRV.	PRESSURE REDUCING VALVE
PW.	POTABLE WATER
RPPD.	REDUCED PRESSURE PRINCIPLE DEVICE BACKFLOW PREVENTER
RW.	RECYCLED WATER
STD.	STANDARD
TYP.	TYPICAL
WBMWD.	WEST BASIN MUNICIPAL WATER DISTRICT

GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION LATEST EDITION AND SUPPLEMENTS THERETO, AS WRITTEN AND PROMULGATED BY PUBLIC WORKS STANDARDS INC., CALIFORNIA WATER SERVICES COMPANY STANDARD PLANS, THE CITY OF TORRANCE STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, WBMWD STANDARD SPECIFICATIONS FOR PIPELINE CONSTRUCTION AND THE RECYCLED WATER URBAN IRRIGATION USER'S MANUAL, LATEST EDITIONS.
- REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AT LEAST TWELVE INCHES (12") ABOVE GRADE, READILY ACCESSIBLE FOR FIELD TEST AND MAINTENANCE, AND AS CLOSE TO THE POTABLE WATER METER AS PRACTICAL.
- DRINKING FOUNTAINS LOCATED IN RECYCLED WATER USE AREAS SHALL BE PROTECTED FROM RECYCLED WATER SPRAY BY A COMBINATION OF SELECTIVE LOCATION OF SUCH EQUIPMENT AND BY APPROPRIATE IRRIGATION SYSTEM DESIGN AND/OR MODIFICATION.
- QUICK COUPLERS AND ELECTRICAL CONTROLLERS SHALL BE IDENTIFIED WITH THE PROPER TAGS AND LABELS. QUICK COUPLERS SHALL BE INSTALLED IN BOXES.
- EXISTING UNDERGROUND UTILITIES ARE SHOWN PER AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO VERIFY AND DOCUMENT ON AS-BUILT DRAWINGS THE ACTUAL LOCATION AND ELEVATIONS IN THE FIELD OF ALL UTILITIES AND ALL POINTS OF CONNECTION. THE FIELD VERIFICATION (POTHOLING) SHALL BE COMPLETED PRIOR TO THE COMMENCEMENT OF ANY MODIFICATIONS TO THE IRRIGATION SYSTEM.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE, VERIFY DEPTH AND PROTECT ALL STRUCTURES, INCLUDING SUBSTRUCTURES, SHOWN ON THE PLANS. THE CONTRACTOR SHALL BEAR THE ENTIRE COST OF REPAIRING OR REPLACING ANY OF SAID STRUCTURES DAMAGED BY HIM/HER DURING PROSECUTION OF THE WORK. ALL REPAIRS AND REPLACEMENTS SHALL BE DONE IN THE PRESENCE OF THE INSPECTOR.
- ALL LOCATIONS SHOWN ON THE PLAN FOR UTILITY LINES HAVE BEEN TAKEN FROM AVAILABLE RECORDS AND THEIR COMPLETENESS OR CORRECTNESS ARE IN NO WAY GUARANTEED.
- THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) AT 1-800-227-2600 AND ALL PUBLIC UTILITY COMPANIES AND OWNERS OF ALL PRIVATE FACILITIES AT LEAST TWO (2) WORKING DAYS IN ADVANCE OF PERFORMING ANY WORK WITHIN SAID AREA.
- RECYCLED WATER SIGNS SHALL BE INSTALLED AT LOCATIONS AGREEABLE TO THE CITY AND DPH. SIGNS MAY BE MOUNTED ON POLES, ATTACHED TO EXISTING FENCES, BUILDINGS, OR EXISTING POLE MOUNTED SIGNS. SIGNAGE SIZE AND WORDING SHALL BE APPROVED BY THE CITY OF TORRANCE. THE SIGN SHALL BE A MINIMUM OF 18"x24" IN SIZE AND INCLUDE THE WORDING AND INTERNATIONAL SYMBOL SHOWN ON FIGURE 30610-A IN TITLE 22 OF THE CALIFORNIA CODE OF REGULATIONS.
- ALL CONCRETE SHALL BE 560-C-3250 UNLESS OTHERWISE SPECIFIED.
- PRIOR TO DELIVERING RECYCLED WATER TO THE PARK, A SUCCESSFUL CROSS CONNECTION AND COVERAGE TEST WILL BE REQUIRED. THE FOLLOWING AGENCIES MAY BE PARTICIPATING IN THE TESTS: WBMWD, CITY OF TORRANCE, CALIFORNIA WATER SERVICE COMPANY, COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC HEALTH, STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES, AND A REPRESENTATIVE FROM TETRA TECH. CONTRACTOR WILL BE REQUIRED TO SEQUENCE THEIR WORK TO ALLOW FOR THE CROSS CONNECTION AND COVERAGE TESTS PRIOR TO PERFORMING THE DISCONNECTION OF THE POTABLE WATER AND CONNECTION OF THE RECYCLED WATER TO THE EXISTING IRRIGATION SYSTEM. CONTRACTOR SHALL PROVIDE SUPPORT DURING THE TEST AND A TEMPORARY POTABLE WATER SOURCE FOR TESTING OF THE IRRIGATION SYSTEM INCLUDING TEMPORARY PIPING, RP, AND WATER METER.
- QUICK COUPLING VALVES TO BE INSTALLED ON AN IRRIGATION SYSTEM SERVICED BY RECYCLED WATER SHALL BE OF BRASS CONSTRUCTION WITH A PERMANENTLY ATTACHED PURPLE RUBBER OR VINYL COVER WITH THE WORDS "RECYCLED WATER" IMPRINTED ON THE COVER. THE VALVE SHALL BE NELSON 42 WITH A 40K KEY (ACME THREAD) OR APPROVED EQUAL.
- CONTRACTOR SHALL REPAIR ANY BROKEN IRRIGATION LINES OR CONTROL WIRES WITHIN THE AREA OF WORK AS A RESULT OF CONSTRUCTION ACTIVITIES. ALL GRASS AREAS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED WITH SEED (OF THE SAME SPECIES OF GRASS).
- CONTRACTOR SHALL NOTIFY WBMWD A MINIMUM OF 48 HOURS PRIOR TO CONNECTION TO EXISTING WBMWD RECYCLED WATER FACILITIES. CONTRACTOR SHALL CONTACT GEORGE COOK AT (310) 420-8603.

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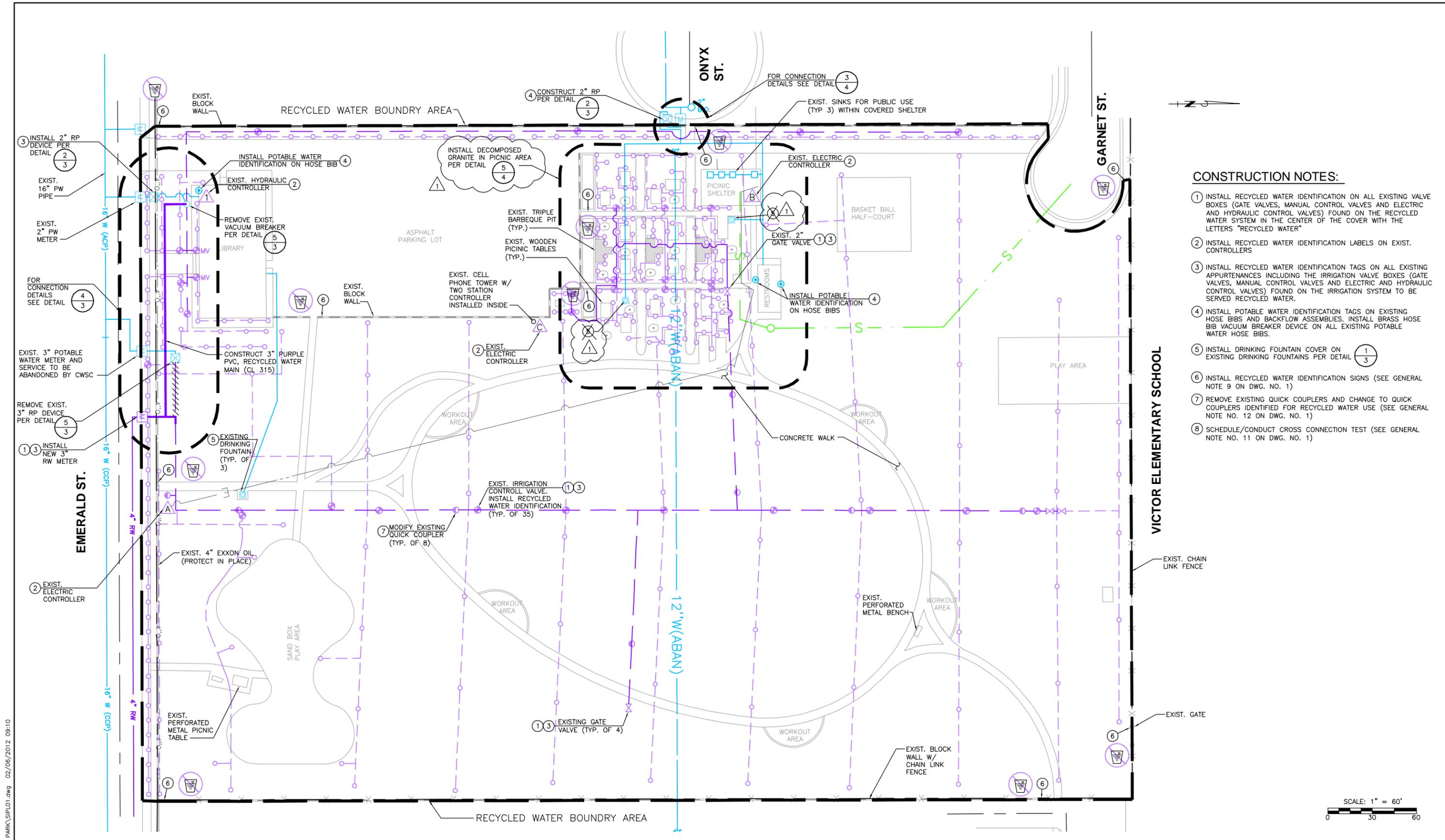
REV	DESCRIPTION	ENGR	DATE	APPD	DATE

	PLANS PREPARED BY: TETRA TECH, INC. 17885 Von Karman Avenue, Suite 500 Irvine, California 92614 (949) 809-5000 (949) 809-5010 FAX
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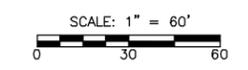
**WEST BASIN MUNICIPAL
WATER DISTRICT**
 EXPANDING RECYCLED WATER SERVICE

VICTOR PARK GENERAL INFORMATION	PROJECT NO. 3915.0011.00
	DWG. NO. <u>1</u> OF <u>5</u>

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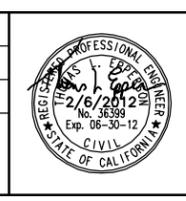


- CONSTRUCTION NOTES:**
- 1 INSTALL RECYCLED WATER IDENTIFICATION ON ALL EXISTING VALVE BOXES (GATE VALVES, MANUAL CONTROL VALVES AND ELECTRIC AND HYDRAULIC CONTROL VALVES) FOUND ON THE RECYCLED WATER SYSTEM IN THE CENTER OF THE COVER WITH THE LETTERS "RECYCLED WATER"
 - 2 INSTALL RECYCLED WATER IDENTIFICATION LABELS ON EXIST. CONTROLLERS
 - 3 INSTALL RECYCLED WATER IDENTIFICATION TAGS ON ALL EXISTING APPURTENANCES INCLUDING THE IRRIGATION VALVE BOXES (GATE VALVES, MANUAL CONTROL VALVES AND ELECTRIC AND HYDRAULIC CONTROL VALVES) FOUND ON THE IRRIGATION SYSTEM TO BE SERVED RECYCLED WATER.
 - 4 INSTALL POTABLE WATER IDENTIFICATION TAGS ON EXISTING HOSE BIBS AND BACKFLOW ASSEMBLIES. INSTALL BRASS HOSE BIB VACUUM BREAKER DEVICE ON ALL EXISTING POTABLE WATER HOSE BIBS.
 - 5 INSTALL DRINKING FOUNTAIN COVER ON EXISTING DRINKING FOUNTAINS PER DETAIL 1/3
 - 6 INSTALL RECYCLED WATER IDENTIFICATION SIGNS (SEE GENERAL NOTE 9 ON DWG. NO. 1)
 - 7 REMOVE EXISTING QUICK COUPLERS AND CHANGE TO QUICK COUPLERS IDENTIFIED FOR RECYCLED WATER USE (SEE GENERAL NOTE NO. 12 ON DWG. NO. 1)
 - 8 SCHEDULE/CONDUCT CROSS CONNECTION TEST (SEE GENERAL NOTE NO. 11 ON DWG. NO. 1)



REV	DESCRIPTION	ENGR	DATE	APPD	DATE

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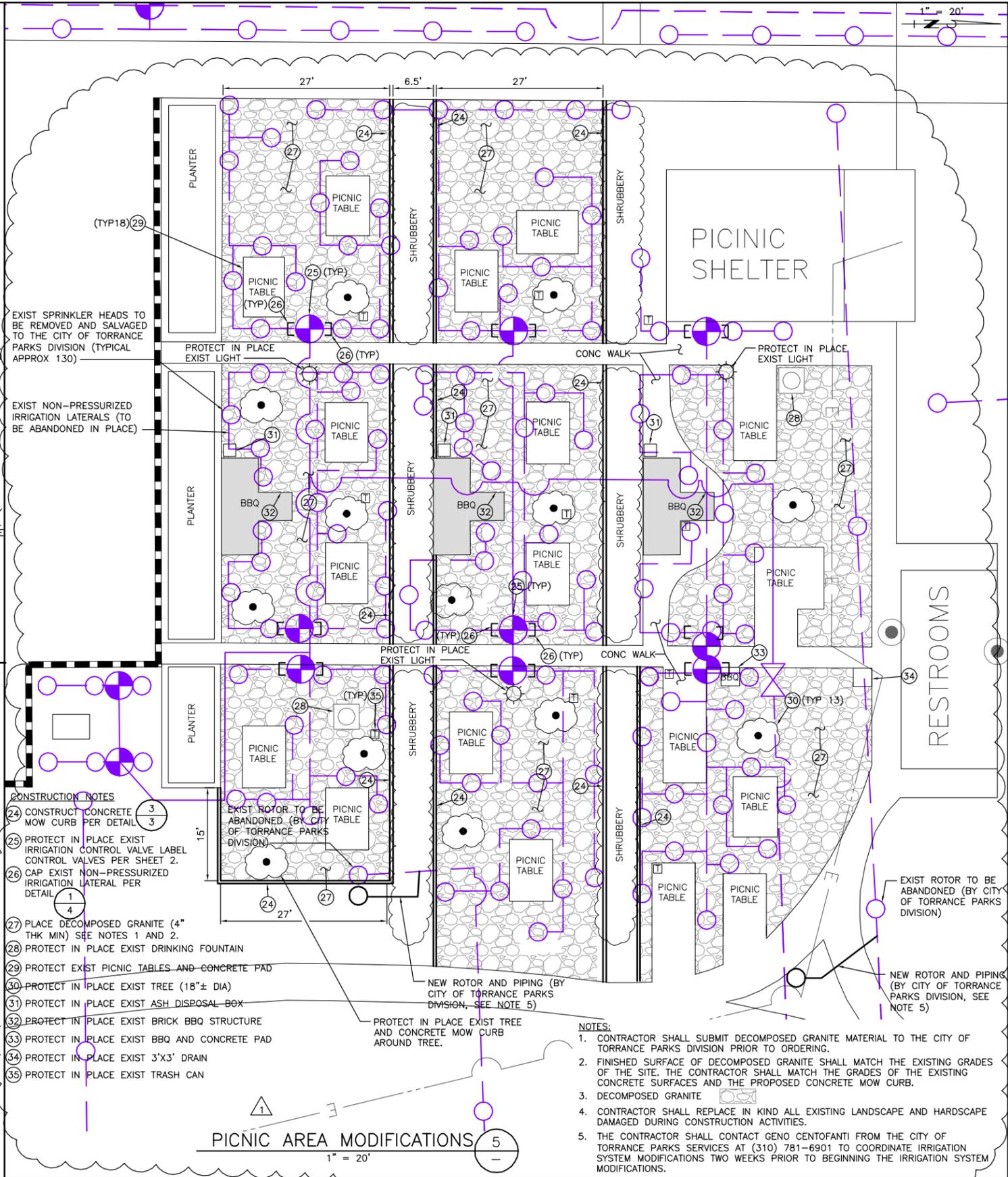
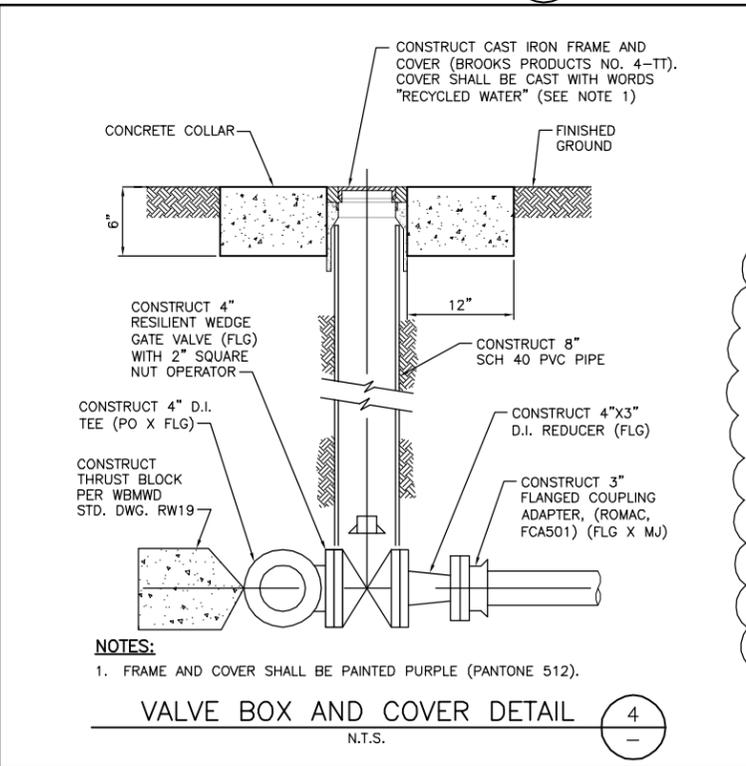
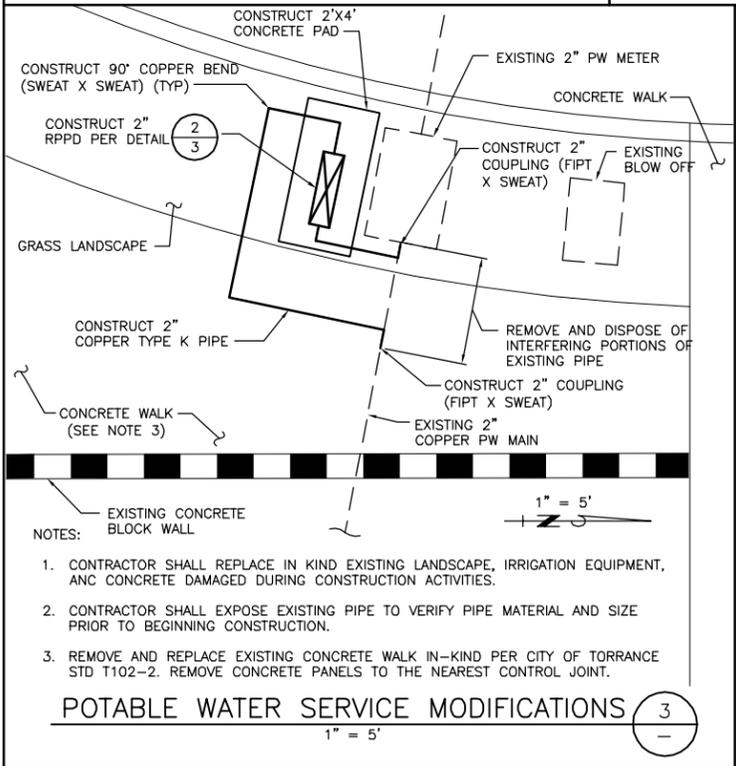
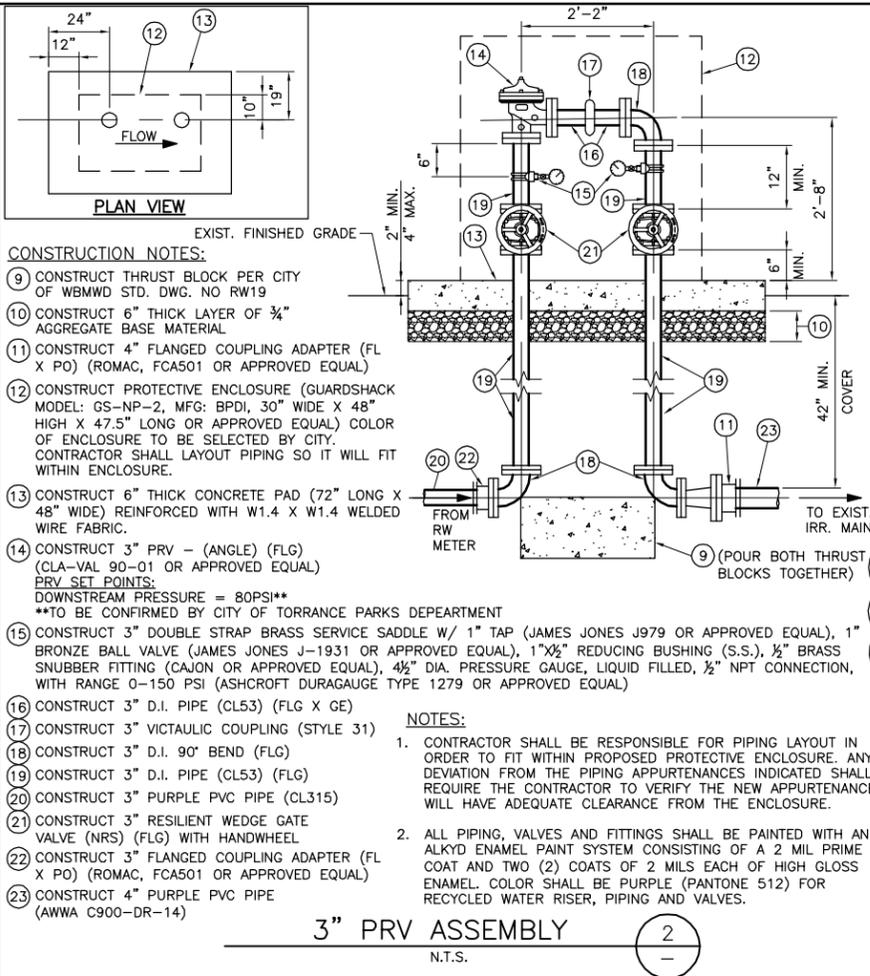
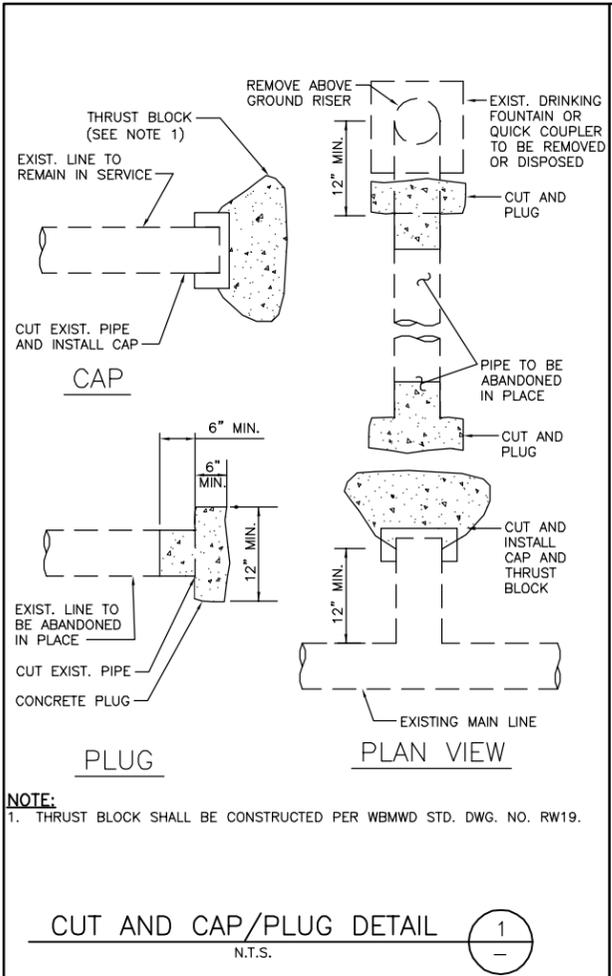


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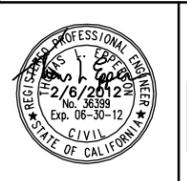
**WEST BASIN MUNICIPAL
 WATER DISTRICT**
 EXPANDING RECYCLED WATER SERVICE

**VICTOR PARK
 SITE PLAN**

PROJECT NO.	3915.0011.00
DWG. NO.	2 OF 5



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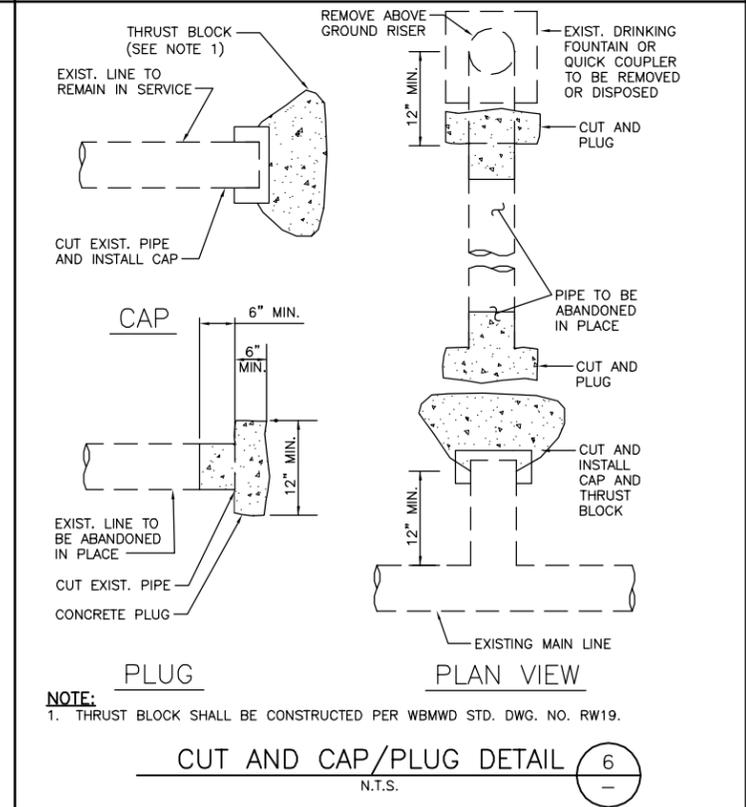
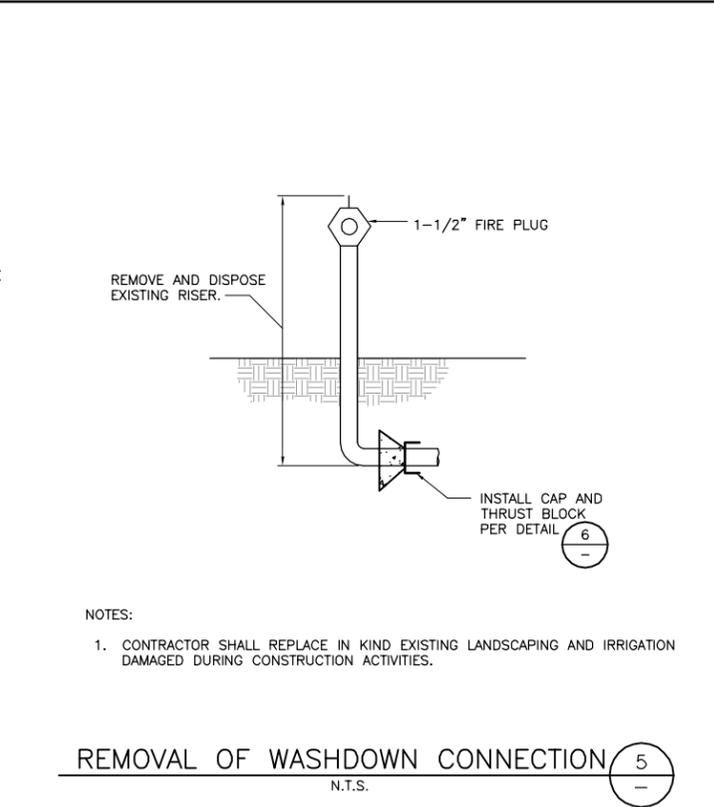
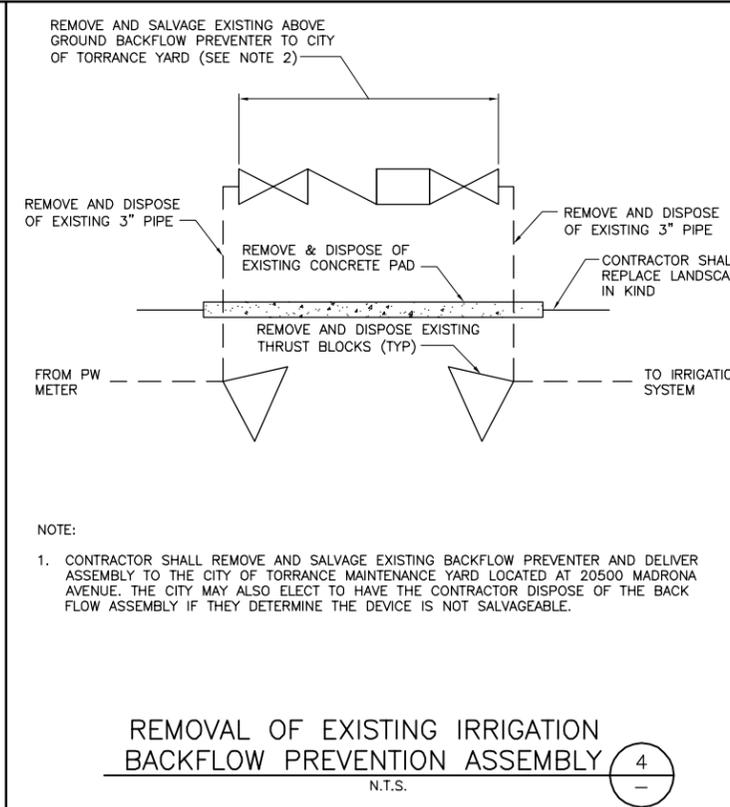
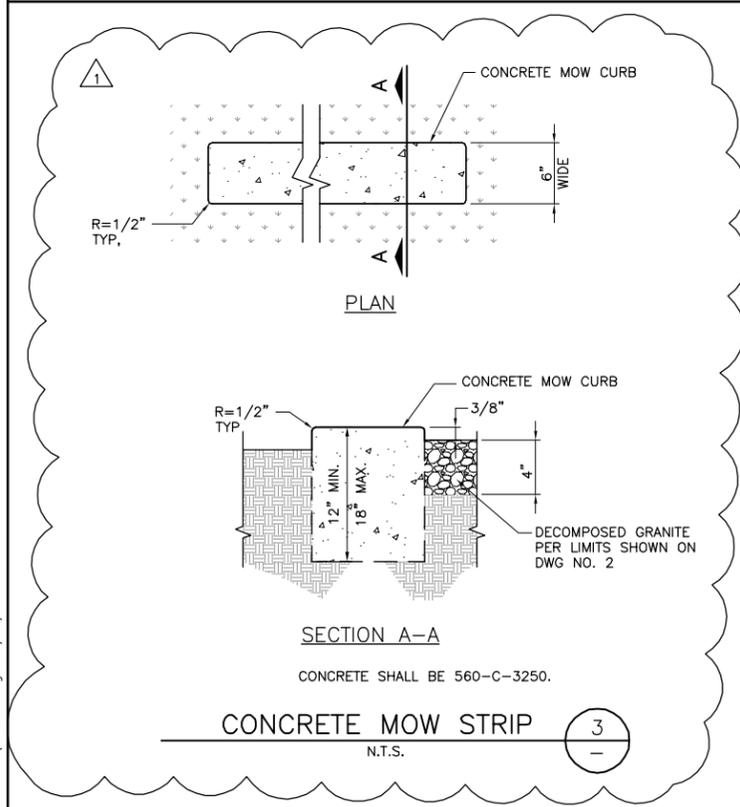
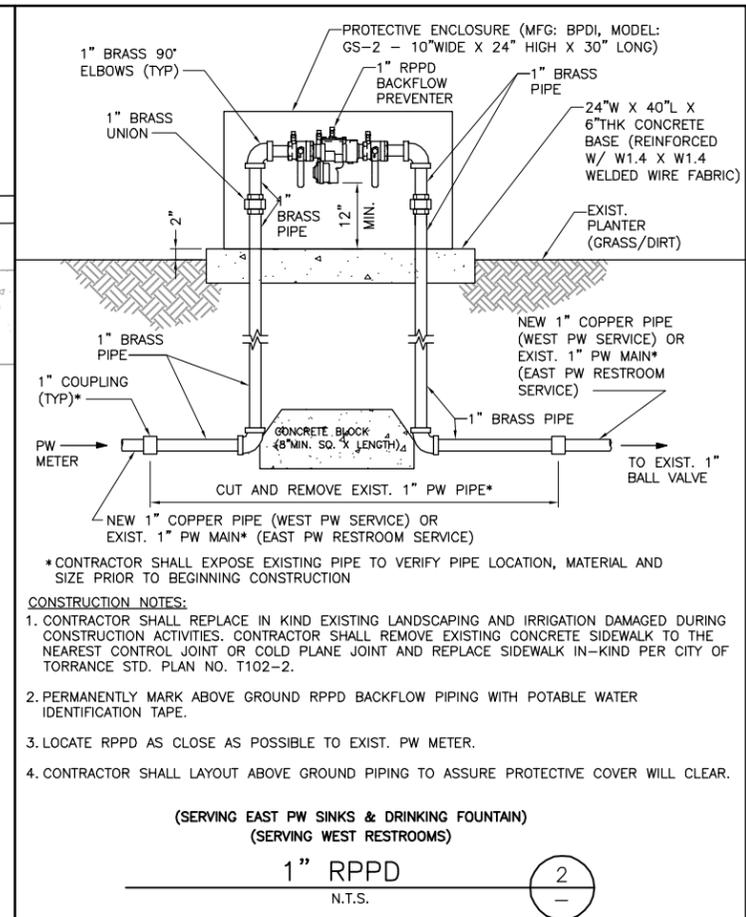
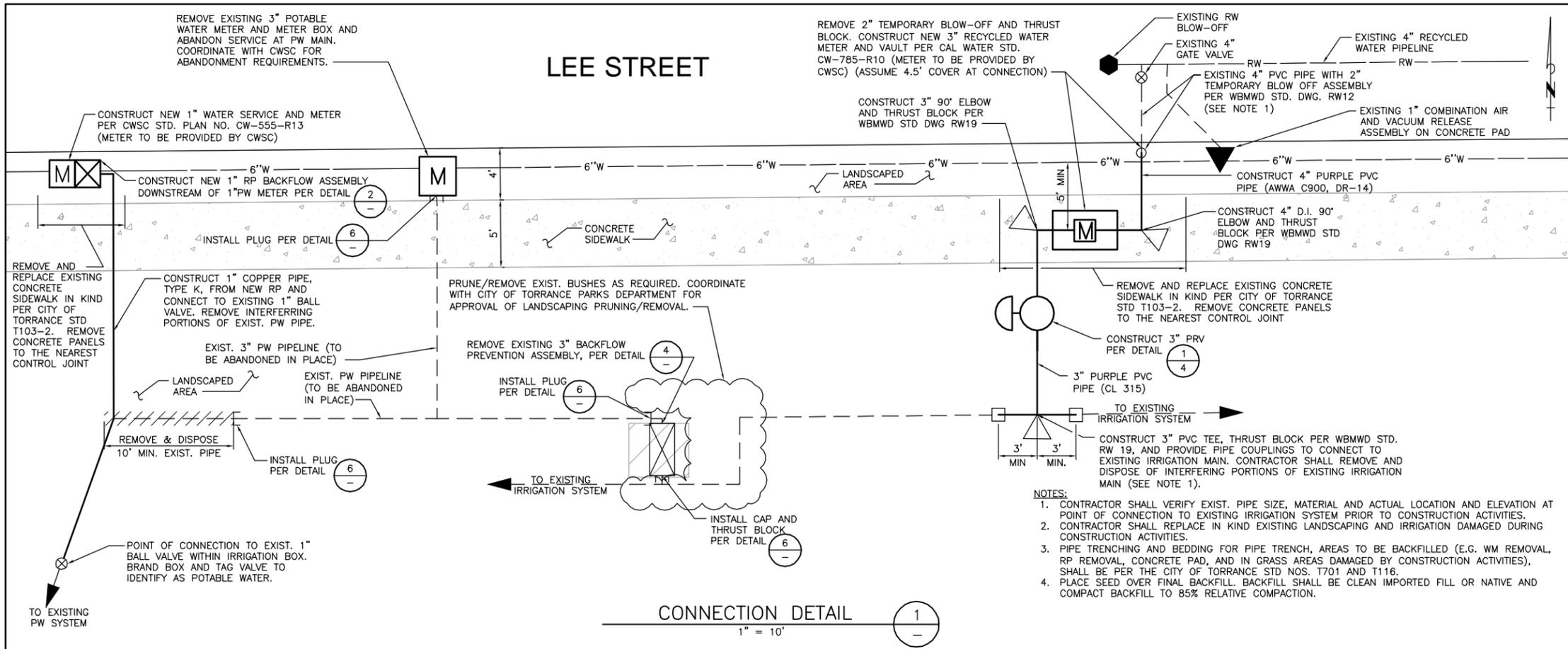
PLANS PREPARED BY:
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WEST BASIN MUNICIPAL WATER DISTRICT
 EXPANDING RECYCLED WATER SERVICE

VICTOR PARK SITE DETAILS

PROJECT NO. 3915.0011.00
 DWG. NO. 4 OF 5

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			DRAWN BY	KMB
			CHECKED BY	MWB



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**WEST BASIN MUNICIPAL
 WATER DISTRICT**
 EXPANDING RECYCLED WATER SERVICE

**PARADISE PARK
 SITE DETAILS**

PROJECT NO.
3915.0011.00

DWG. NO. **3** OF **4**



GUIDELINES FOR PIPELINE CONSTRUCTION AND INSTALLATION -
FOR THE SAFE USE OF RECYCLED / RECLAIMED WASTEWATER

PURPOSE: As a result of increasing availability of recycled / reclaimed wastewater and an increased need for the transmission and use thereof, the Department of Public Health – Environmental Health (the Department) has found it necessary to establish the following regulations for pipeline construction and installation as well as for the safe use of recycled / reclaimed wastewater. These regulations are intended to protect public health by ensuring the safety of our domestic potable water supplies.

BACKGROUND: A recent increase in the number of inquiries and interest displayed regarding the use of recycled / reclaimed water, in the ongoing efforts to conserve water, have necessitated the need to establish definitions, standards and regulation for the uniform review and approval of recycled / reclaimed wastewater. Recycled / reclaimed water may be used for surface irrigation of the following: food crops, parks and playgrounds; school yards; residential landscaping; and unrestricted access golf courses.

DEFINITIONS:

Gray Water means untreated wastewater that has not come into contact with toilet waste, kitchen sink waste, dishwasher waste or similarly contaminated sources. Gray water includes water from bathtubs, showers, bathroom wash basins, clothes-washers and laundry tubs.

Non-Potable Water means water which is unfit for human or animal consumption due to contaminants that exceed the current permissible Maximum Contaminant Level (MCL) in drinking water.

Potable Water means water which is fit for consumption by humans and other animals. The U.S. Environmental Protection Agency (EPA) identifies contaminants that may adversely affect public health and occur in drinking water with a frequency and at levels that pose a threat to public health. The EPA establishes (MCLs) for both biological and chemical contaminants permissible in drinking water. These MCLs become enforceable standards that determine the potability of water.

Recycled / Reclaimed Water means non-potable water that meets or as a result of treatment, meets federal requirements for its intended uses. The level of treatment and quality of the recycled / reclaimed water shall be approved by the Authority Having Jurisdiction. Recycled / reclaimed water systems shall have no connection to any potable water system, with or without mechanical backflow prevention devices.

Revised 09/22/09

The use of recycled / reclaimed wastewater for irrigation purposes shall minimize exposure of the wastewater spray to drinking fountains and picnic tables through selective location of equipment and by appropriate irrigation system design. Additionally, the following measures should be taken: recycled wastewater spraying shall be done during hours of least public exposure; any area where recycled wastewater is released, used or impounded should be posted, informing the public that recycled water is being used; and irrigation practices utilizing recycled water shall be controlled to prevent surface runoff.

BACKFLOW PROTECTION

- There shall be no interconnection between a potable water system and a recycled / reclaimed water system within the user's premises.
- A cye or pressure test shall be utilized to confirm the physical separation of a recycled wastewater system and a potable water system. Testing shall be performed in conjunction with the Water Purveyor and this Department and conducted before the introduction of recycled wastewater.
- An approved backflow prevention device shall be installed at the potable water service connection.
- In a recycled / reclaimed wastewater distribution system, a backflow prevention device may be required at the recycled wastewater meter or at specific on-site locations where said use could degrade the quality of the recycled wastewater supply.



RECYCLED / RECLAIMED WASTEWATER SYSTEMS SHALL BE CONSTRUCTED IN COMPLIANCE WITH APPLICABLE POTABLE WATER SYSTEM CONSTRUCTION STANDARDS AS WELL AS THOSE SPECIFIED IN "THE PURPLE BOOK", CALIFORNIA HEALTH LAWS RELATED TO RECYCLED WATER, (CALIFORNIA HEALTH AND SAFETY CODE, WATER CODE, TITLES 22 AND 17 OF THE CALIFORNIA CODE OF REGULATIONS) AND THE LOS ANGELES COUNTY CODE (LACC), TITLE 28 – PLUMBING, APPENDIX J.

PRELIMINARY REQUIREMENTS

- Plans and specifications for recycled / reclaimed wastewater distribution systems, as well as the use and operation of such systems shall be submitted to the Department for review and approval prior to construction or implementation.
- Prior to commencing construction, the Contractor shall contact the Department to schedule an inspection of the proposed on-site recycled / reclaimed and potable water work.
- No piping for potable or recycled / reclaimed water in conjunction with a specified project shall be installed prior to plan check approval and preliminary inspection.
- Upon completion of construction, no excavation or open trench may be backfilled without first securing the Department approval. Any areas backfilled without prior approval will be required to be exposed and corrected as necessary.
- Only a Department approved temporary water connection, to a potable water supply via a dedicated, approved, reduced-pressure-principle backflow prevention device shall be permitted to be utilized for the purpose of flushing, pressure testing, construction, landscape use or the final cross-connection testing.

SEPARATION REQUIREMENTS

The maximum attainable separation of recycled / reclaimed wastewater lines and potable water lines shall be enforced in order to minimize potential risks associated with pipeline breaks resulting in infiltration of wastewater from leaking wastewater lines into domestic water lines, or accidental cross-connections between recycled wastewater and potable water systems.

- Parallel Construction:** A horizontal separation of at least ten feet (10') shall be required between pressurized, buried, recycled / reclaimed and potable water piping (all distance to be measured from pipeline outside diameter).

- Cross-Over Construction:** Buried potable water pipes crossing over pressurized recycled / reclaimed water pipes shall be laid not less than twelve inches (12") above the reclaimed water pipes. Reclaimed water pipes laid in the same trench or crossing-over building sewer or drainage piping shall be installed in compliance with the LACC – Title 28, Plumbing, Sections 609.0 and 720.0.
- Unused or Abandoned Potable Water Lines:** These lines are to be severed as close to water mains as practical, capped, and a ten foot (10') section of abandoned line removed and cemented under direct supervision by the Department.
- Existing On-site Piping:** Maximum separation of recycled / reclaimed wastewater lines and potable water lines shall be maintained upon system additions or modification.

PIPELINE MATERIALS AND IDENTIFICATION

All recycled / reclaimed water pipe materials, valves and fittings shall conform to the requirements of the LACC – Title 28, Plumbing, Sections 604.0, 605.0 and 606.0.

All recycled / reclaimed wastewater lines (pressure / non-pressure), valve boxes, hydrants and appurtenances shall be identified to clearly distinguish between recycled / reclaimed wastewater, non-potable and potable water systems (as specified in LACC – Title 28, Plumbing, Appendix J).

- Recycled / Reclaimed Wastewater:** All buried, recycled, wastewater systems (pressure / non-pressure) shall utilize purple pipe with black uppercase lettering "CAUTION: RECYCLED WATER – DO NOT DRINK" printed on opposite sides of the pipe. For limited application, the use of continuous lettering on three inch (3") minimum width purple tape with one inch black or white contrasting uppercase lettering "CAUTION RECYCLED WATER – DO NOT DRINK" permanently affixed at intervals not to exceed five feet, atop all horizontal piping, laterals and mains. Identification tape shall extend to all valve boxes and / or vaults, exposed piping, hydrants and quick couplers. All valves, except future supply control valves shall be equipped with a locking feature. All mechanical equipment that is appurtenant to the recycled / reclaimed water system shall be painted purple.

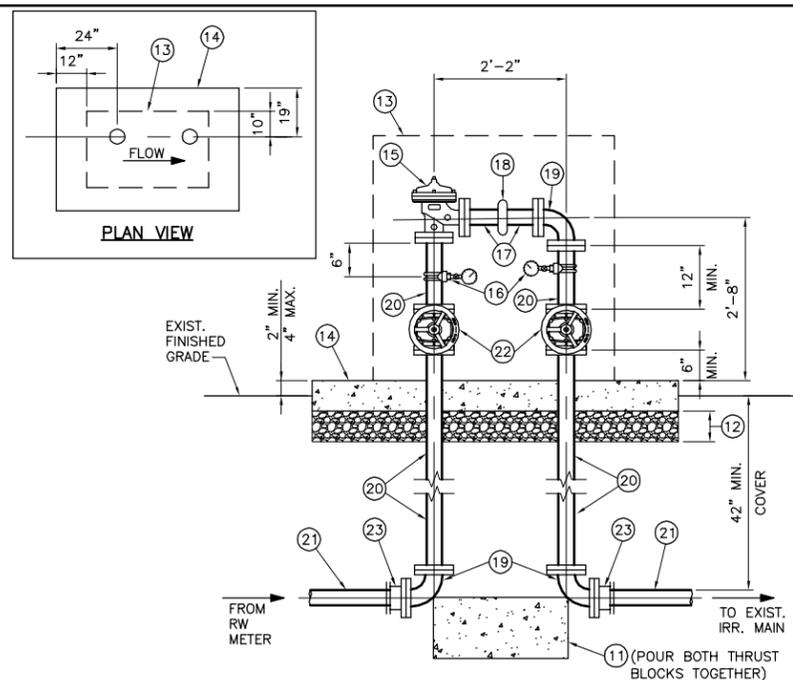
- Potable Water:** All potable water lines shall be installed in accordance with the Uniform Plumbing Code and all other applicable potable water system construction standards. All buried potable water lines shall be clearly identified by continuous lettering on three inch (3") minimum width blue tape with one inch (1") white lettering bearing the repeated wording "POTABLE WATER" permanently affixed at ten foot intervals atop all horizontal piping, laterals and mains. Identification tape shall extend to all valve boxes and / or vaults, exposed piping and hydrants. Identification tape is not necessary for extruded colored PVC with continuous wording "POTABLE WATER" printed in contrasting lettering on opposite sides of the pipe.

- Non-Potable Water:** All non-potable irrigation / industrial water lines (pressure / non-pressure) shall be identified by continuous lettering on three inch (3") minimum width tape with one inch (1") contrasting lettering bearing the continuous uppercase lettering "NON-POTABLE WATER – DO NOT DRINK" permanently affixed at ten foot (10') intervals atop all horizontal piping, laterals and mains. Identification tape shall extend to all valve boxes and / or vaults, exposed piping, hydrants and quick couplers. Exposed piping, valve boxes, vaults, control valves, quick coupling valves, outlets and related appurtenances shall be color-coded and labeled / tagged to differentiate between recycled / reclaimed wastewater, potable water and non-potable water systems. Tags identifying recycled / reclaimed water shall have the appropriate identification on both sides (wording on one side and symbol on the opposite side).



**THE SAFE USE OF RECYCLED / RECLAIMED WATER
PROTECTS POTABLE WATER**

- Deteriorated or inadequately-protected well water casings shall be repaired or replaced to protect aquifers against contamination from recycled / reclaimed wastewater systems.
- An On-Site Water Supervisor shall be appointed, having the responsibility of oversight for the protection of the potable water system (provided for under Title 17, Section 7596, and California Code of Regulations). The name and position of the On-Site Water Supervisor shall be reported to the water purveyor and to the Department. This position will be responsible for the installation, operation and maintenance of the recycled / reclaimed wastewater and potable water systems; authorization of any piping changes or additions to either the potable or recycled systems; prevention of potential hazards; implementation of the regulations; and coordination with the Cross-Connection Program of the water purveyor and of this Department.
- Hose bibbs shall not be permitted in any areas of public access to recycled / reclaimed wastewater systems, to prevent unauthorized use of recycled wastewater. Quick-couplers are permitted in lieu of hose-bibb outlets but shall only be connected to recycled / reclaimed wastewater lines. Hose bibbs may be permitted in areas that are not accessible to the public, provided they are properly identified with permanently affixed tags, labels, or plates with uppercase lettering "RECYCLED WATER – DO NOT DRINK" in English.



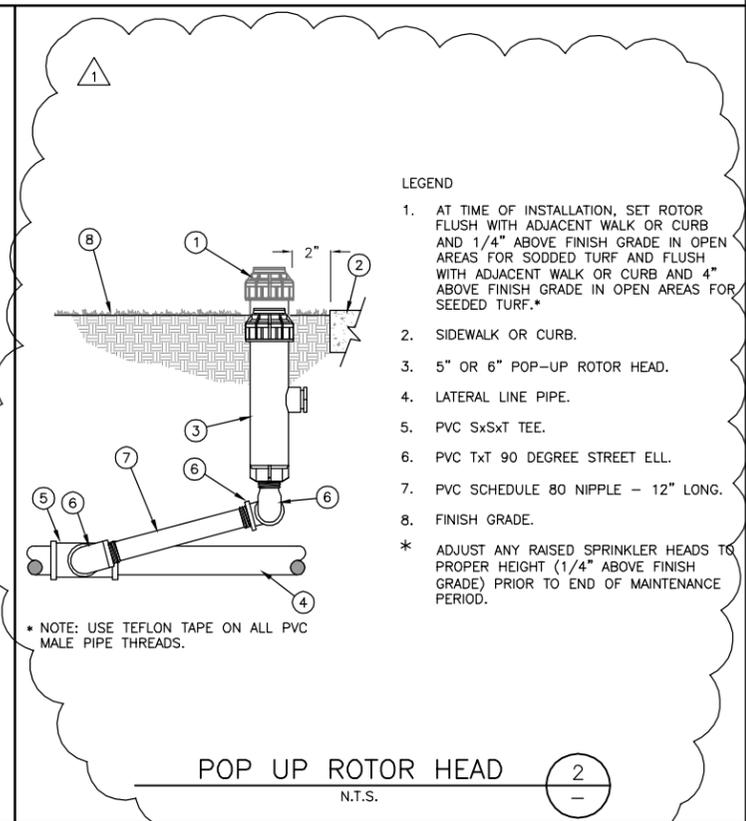
3" PRV ASSEMBLY
N.T.S.

CONSTRUCTION NOTES:

- CONSTRUCT THRUST BLOCK PER CITY OF BWMWD STD. DWG. NO. RW19
- CONSTRUCT 6" THICK LAYER OF 3/4" AGGREGATE BASE MATERIAL
- CONSTRUCT PROTECTIVE ENCLOSURE (GUARDSHACK MODEL: GS-NP-2, MFG: BPOI, 30" WIDE X 48" HIGH X 47.5" LONG OR APPROVED EQUAL) COLOR OF ENCLOSURE TO BE SELECTED BY CITY. CONTRACTOR SHALL LAYOUT PIPING SO IT WILL FIT WITHIN ENCLOSURE.
- CONSTRUCT 6" THICK CONCRETE PAD (72" LONG X 48" WIDE) REINFORCED WITH W1.4 X W1.4 WELDED WIRE FABRIC.
- CONSTRUCT 3" PRV – (ANGLE) (FLG) (CLA-VAL 90-01 OR APPROVED EQUAL) PRV SET POINTS:
DOWNSTREAM PRESSURE = 80PSI**
**TO BE CONFIRMED BY CITY OF TORRANCE PARKS DEPARTMENT
- CONSTRUCT 3" DOUBLE STRAP BRASS SERVICE SADDLE W/ 1" TAP (JAMES JONES J979 OR APPROVED EQUAL), 1" BRONZE BALL VALVE (JAMES JONES J-1931 OR APPROVED EQUAL), 1" X 1/2" REDUCING BUSHING (S.S.), 1/2" BRASS SNUBBER FITTING (CAJON OR APPROVED EQUAL), 4/8" DIA. PRESSURE GAUGE, LIQUID FILLED, 1/2" NPT CONNECTION, WITH RANGE 0-150 PSI (ASHCROFT DURAGAUGE TYPE 1279 OR APPROVED EQUAL)
- CONSTRUCT 3" D.I. PIPE (CL53) (FLG X GE)
- CONSTRUCT 3" VICTAULIC COUPLING (STYLE 31)
- CONSTRUCT 3" D.I. 90° BEND (FLG)
- CONSTRUCT 3" D.I. PIPE (CL53) (FLG)
- CONSTRUCT 3" PURPLE PVC PIPE (CL315)
- CONSTRUCT 3" RESILIENT WEDGE GATE VALVE (NRS) (FLG) WITH HANDWHEEL
- CONSTRUCT 3" FLANGED COUPLING ADAPTER (FL X PO) (ROMAC, FCA501 OR APPROVED EQUAL)

NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR PIPING LAYOUT IN ORDER TO FIT WITHIN PROPOSED PROTECTIVE ENCLOSURE. ANY DEVIATION FROM THE PIPING APPURTENANCES INDICATED SHALL REQUIRE THE CONTRACTOR TO VERIFY THE NEW APPURTENANCE WILL HAVE ADEQUATE CLEARANCE FROM THE ENCLOSURE.
- ALL PIPING, VALVES AND FITTINGS SHALL BE PAINTED WITH AN ALKYD ENAMEL PAINT SYSTEM CONSISTING OF A 2 MIL PRIME COAT AND TWO (2) COATS OF 2 MILS EACH OF HIGH GLOSS ENAMEL. COLOR SHALL BE PURPLE (PANTONE 512) FOR RECYCLED WATER RISER, PIPING AND VALVES.



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REV	DESCRIPTION	ENGR	DATE	APPD	DATE

DPH COMMENTS	TLE	01/12	SCALE	AS NOTED
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			FILENAME	WTD02
			DESIGNED BY	CH
			DRAWN BY	KMB
			CHECKED BY	MWB



PLANS PREPARED BY:
TETRA TECH, INC.
17885 Von Karman Avenue, Suite 500
Irvine, California 92614
(949) 809-5000
(949) 809-5010 FAX

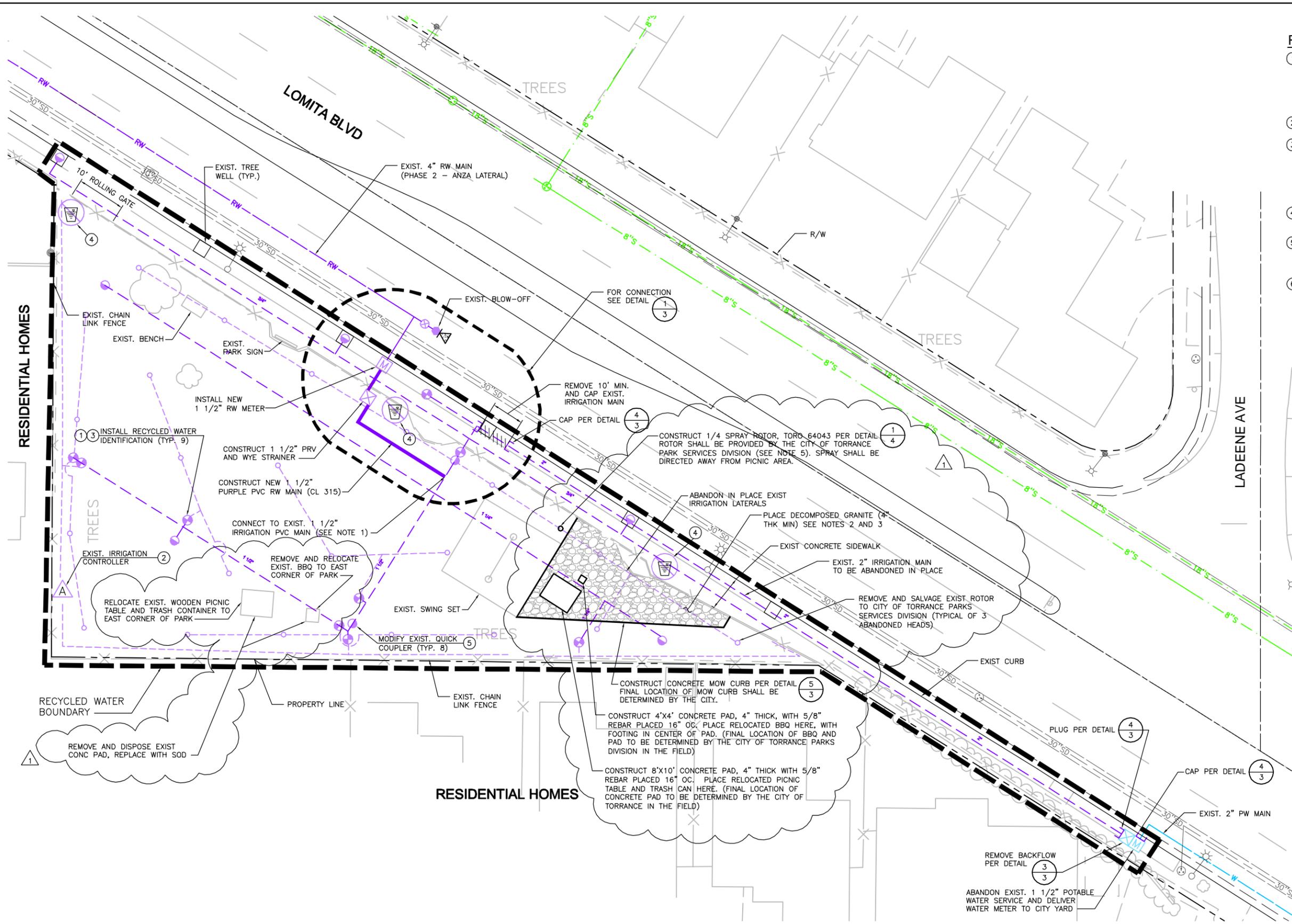
**WEST BASIN MUNICIPAL
WATER DISTRICT**
EXPANDING RECYCLED WATER SERVICE

PARADISE PARK
DPH RECYCLED WATER GUIDELINES & DETAILS

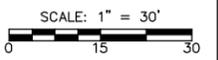
PROJECT NO.
3915.0011.00
DWG. NO. 4 OF 4

RW SIGNING AND TAGGING NOTES:

- 1 INSTALL RECYCLED WATER IDENTIFICATION ON ALL EXISTING VALVE BOXES (GATE VALVES, MANUAL CONTROL VALVES AND ELECTRIC CONTROL VALVES) FOUND ON THE RECYCLED WATER SYSTEM IN THE CENTER OF THE COVER WITH THE LETTERS "RECYCLED WATER"
- 2 INSTALL RECYCLED WATER IDENTIFICATION LABELS ON EXIST. CONTROLLERS
- 3 INSTALL RECYCLED WATER IDENTIFICATION TAGS ON ALL EXISTING APPURTENANCES INCLUDING THE IRRIGATION VALVE BOXES (GATE VALVES, MANUAL CONTROL VALVES AND ELECTRIC CONTROL VALVES) FOUND ON THE IRRIGATION SYSTEM TO BE SERVED RECYCLED WATER.
- 4 INSTALL RECYCLED WATER IDENTIFICATION SIGNS (SEE GENERAL NOTE NO. 9 ON DWG NO. 1)
- 5 REMOVE EXISTING QUICK COUPLERS AND CHANGE TO QUICK COUPLERS IDENTIFIED FOR RECYCLED WATER USE (SEE GENERAL NOTE NO. 12 ON DWG NO. 1)
- 6 SCHEDULE/CONDUCT CROSS CONNECTION TEST PER LA COUNTY RW USERS MANUAL (SEE NOTE NO. 11 ON DWG. NO. 1).



- NOTES:**
1. CONTRACTOR SHALL VERIFY EXIST. PIPE SIZE, MATERIAL AND ACTUAL LOCATION AND ELEVATION AT POINT OF CONNECTION TO EXISTING IRRIGATION SYSTEM PRIOR TO CONSTRUCTION ACTIVITIES.
 2. CONTRACTOR SHALL SUBMIT DECOMPOSED GRANITE MATERIAL TO THE CITY OF TORRANCE PARKS DIVISION PRIOR TO ORDERING.
 3. FINISHED SURFACE OF DECOMPOSED GRANITE SHALL MATCH THE EXISTING GRADES OF THE SITE. CONTRACTOR SHALL MATCH THE GRADES OF THE EXISTING CONCRETE SURFACES AND THE PROPOSED CONCRETE MOW CURB.
 4. DECOMPOSED GRANITE
 5. ROTOR HEADS SHALL BE PROVIDED BY THE CITY OF TORRANCE PARKS DEPARTMENT. THE FINAL LOCATION OF ROTOR HEADS SHALL BE DETERMINED IN THE FIELD BY THE CITY OF TORRANCE PARKS DEPARTMENT. THE CONTRACTOR SHALL CONTACT GENO CENTOFANTI FROM THE CITY OF TORRANCE PARKS SERVICES AT (310) 781-6901 TO COORDINATE IRRIGATION SYSTEM MODIFICATIONS AND REQUEST THE SPRINKLER HEADS TWO WEEKS PRIOR TO BEGINNING THE IRRIGATION SYSTEM MODIFICATIONS.



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REV	DESCRIPTION	ENGR	DATE	APPD	DATE

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DESIGNED BY	CH	
DRAWN BY	EAC	
CHECKED BY	MWB	



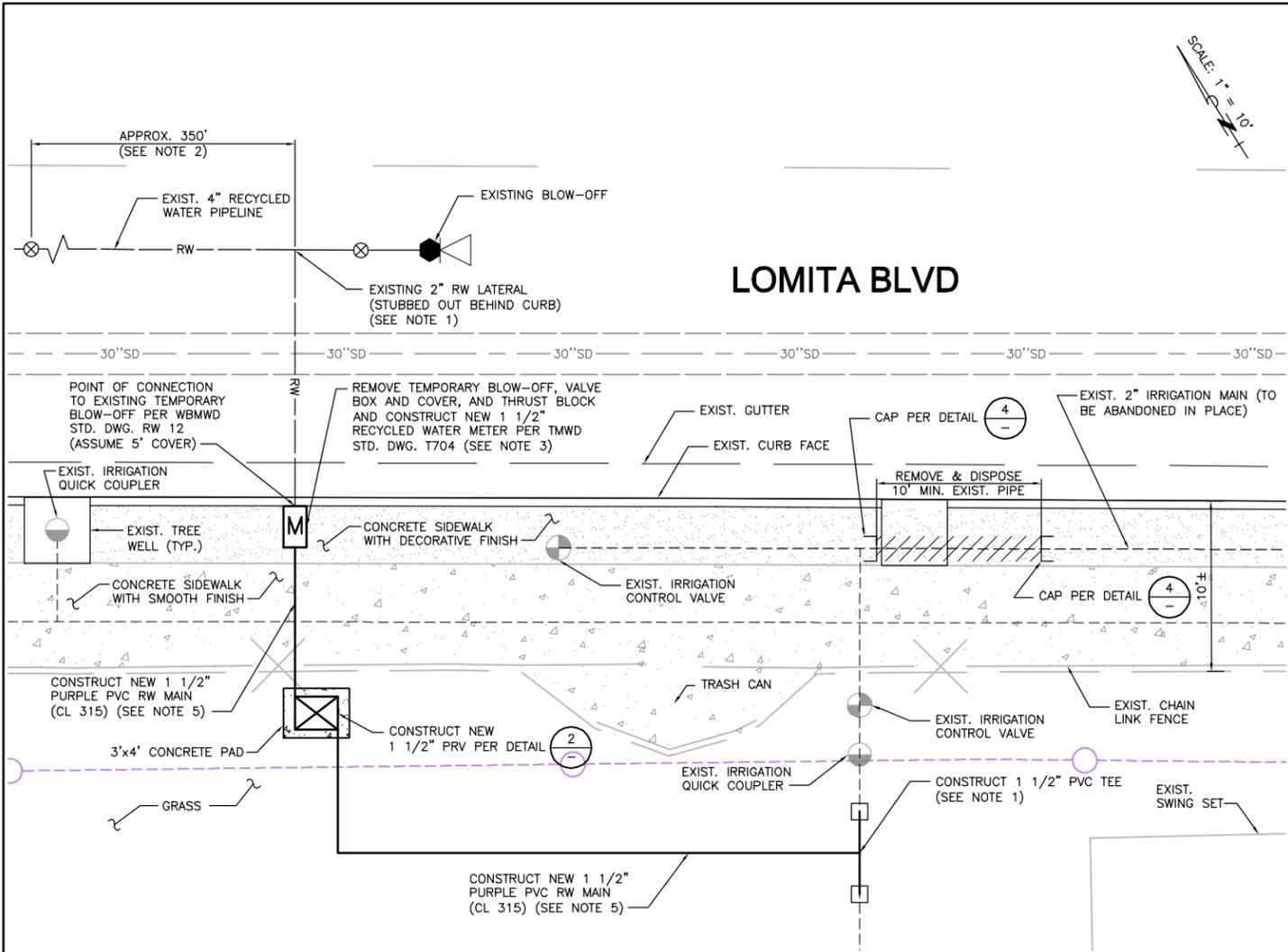
PLANS PREPARED BY:
TETRA TECH, INC.
 17885 Von Karman Avenue, Suite 500
 Irvine, California 92614
 (949) 809-5000
 (949) 809-5010 FAX

**WEST BASIN MUNICIPAL
 WATER DISTRICT**
 EXPANDING RECYCLED WATER SERVICE

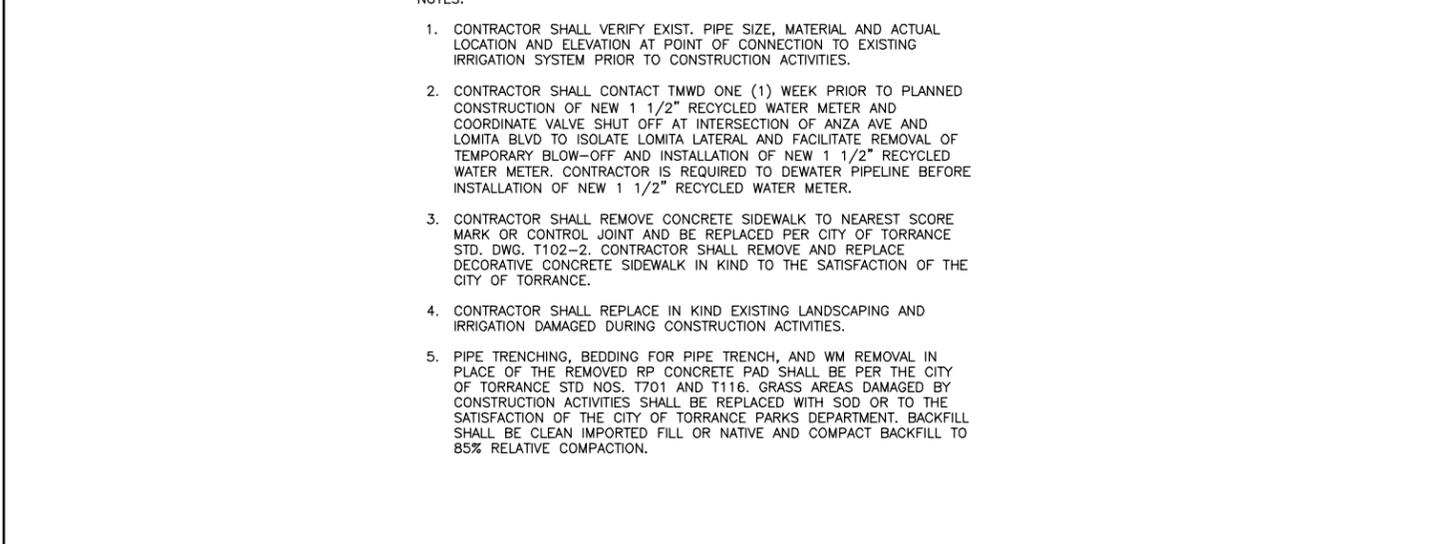
**LA PALOMA PARK
 SITE PLAN**

PROJECT NO.
09265.09001

DWG. NO. 2 OF 4

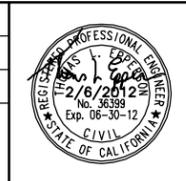


LOMITA BLVD

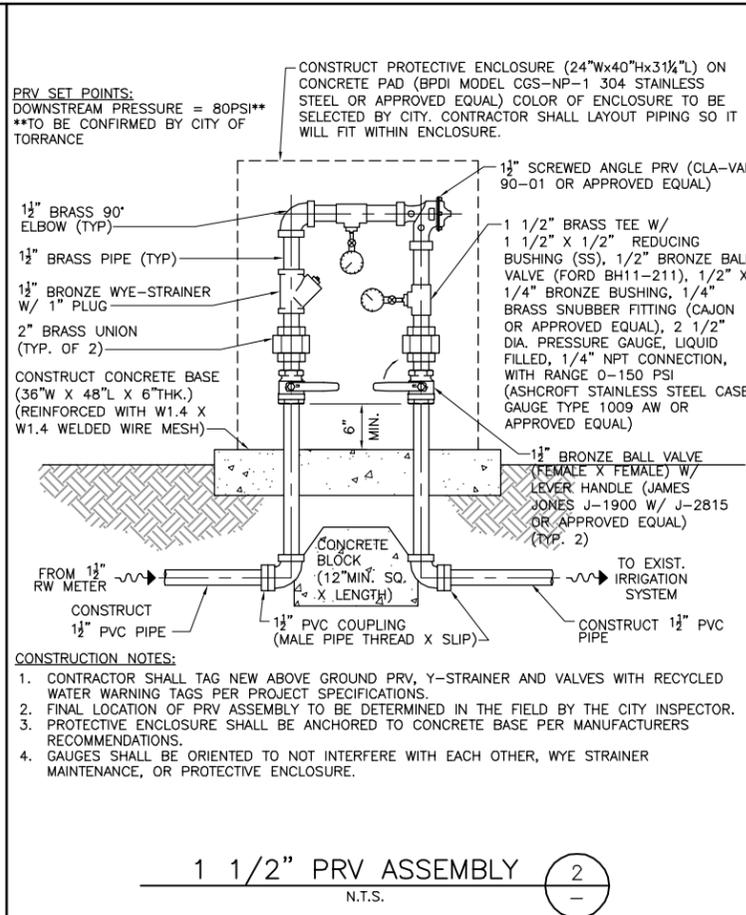


CONNECTION DETAIL (1) 1" = 10'

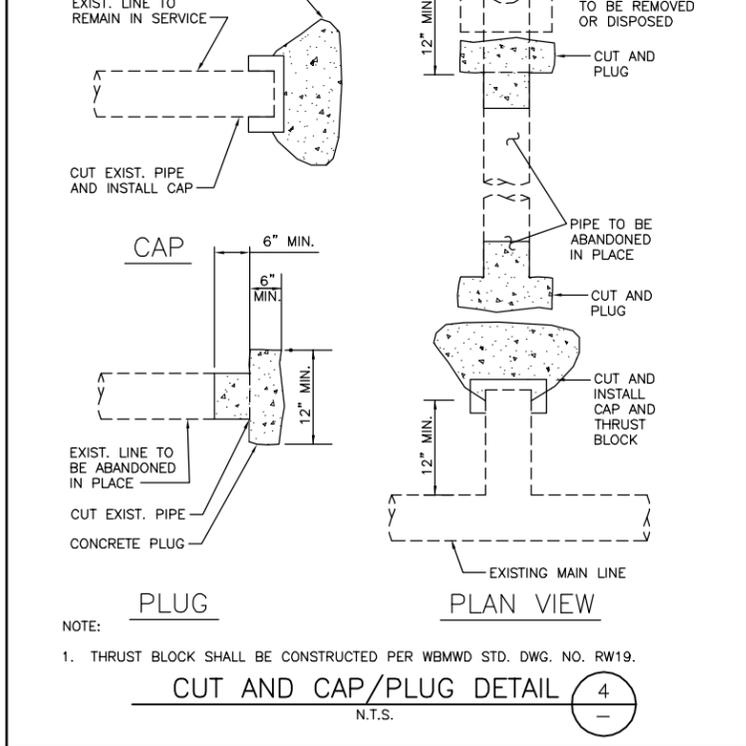
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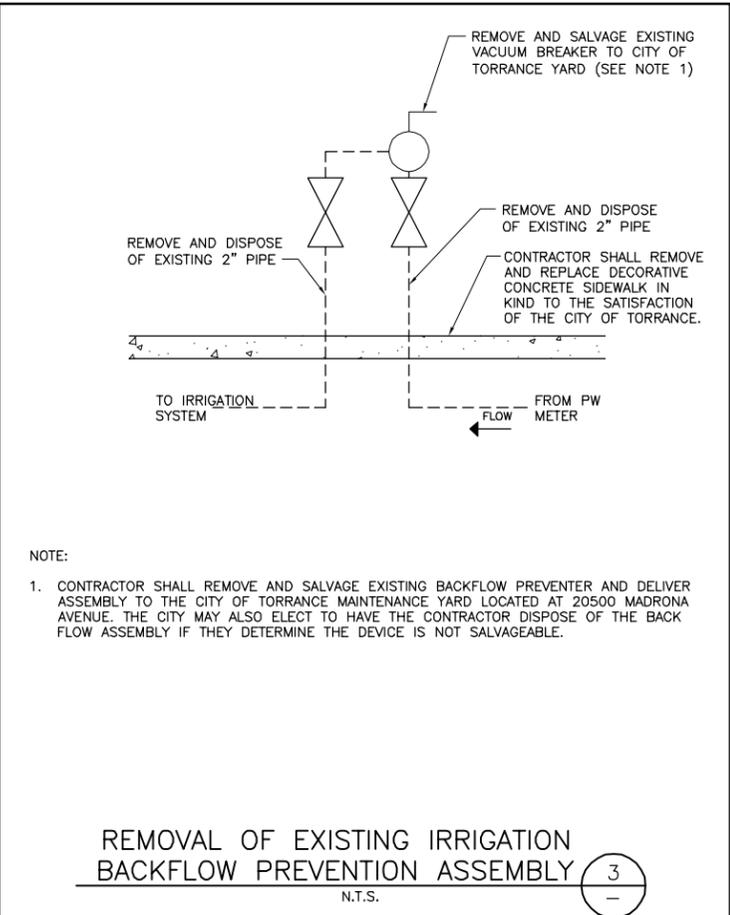
PLANS PREPARED BY:
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 17885 Von Karman Avenue, Suite 500
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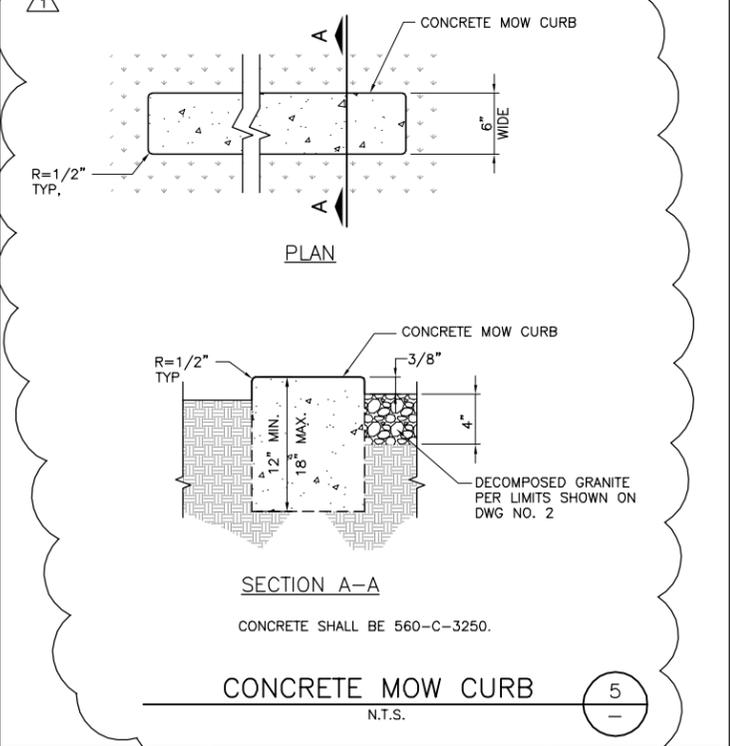
1 1/2" PRV ASSEMBLY (2) N.T.S.



CUT AND CAP/PLUG DETAIL (4) N.T.S.



REMOVAL OF EXISTING IRRIGATION BACKFLOW PREVENTION ASSEMBLY (3) N.T.S.



CONCRETE MOW CURB (5) N.T.S.

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WEST BASIN MUNICIPAL WATER DISTRICT
 EXPANDING RECYCLED WATER SERVICE

LA PALOMA PARK SITE DETAILS

PROJECT NO.
09265.09001
 DWG. NO. **3** OF **4**



GUIDELINES FOR PIPELINE CONSTRUCTION AND INSTALLATION -
FOR THE SAFE USE OF RECYCLED / RECLAIMED WASTEWATER

PURPOSE: As a result of increasing availability of recycled / reclaimed wastewater and an increased need for the transmission and use thereof, the Department of Public Health – Environmental Health (the Department) has found it necessary to establish the following regulations for pipeline construction and installation as well as for the safe use of recycled / reclaimed wastewater. These regulations are intended to protect public health by ensuring the safety of our domestic potable water supplies.

BACKGROUND: A recent increase in the number of inquiries and interest displayed regarding the use of recycled / reclaimed water, in the ongoing efforts to conserve water, have necessitated the need to establish definitions, standards and regulation for the uniform review and approval of recycled / reclaimed wastewater. Recycled / reclaimed water may be used for surface irrigation of the following: food crops, parks and playgrounds; school yards; residential landscaping; and unrestricted access golf courses.

DEFINITIONS:

Gray Water means untreated wastewater that has not come into contact with toilet waste, kitchen sink waste, dishwasher waste or similarly contaminated sources. Gray water includes water from bathtubs, showers, bathroom wash basins, clothes-washers and laundry tubs.

Non-Potable Water means water which is unfit for human or animal consumption due to contaminants that exceed the current permissible Maximum Contaminant Level (MCL) in drinking water.

Potable Water means water which is fit for consumption by humans and other animals. The U.S. Environmental Protection Agency (EPA) identifies contaminants that may adversely affect public health and occur in drinking water with a frequency and at levels that pose a threat to public health. The EPA establishes (MCLs) for both biological and chemical contaminants permissible in drinking water. These MCLs become enforceable standards that determine the potability of water.

Recycled / Reclaimed Water means non-potable water that meets or as a result of treatment, meets federal requirements for its intended uses. The level of treatment and quality of the recycled / reclaimed water shall be approved by the Authority Having Jurisdiction. Reclaimed / recycled water systems shall have no connection to any potable water system, with or without mechanical backflow prevention devices.

Revised 09/22/09

- The use of recycled / reclaimed wastewater for irrigation purposes shall minimize exposure of the wastewater spray to drinking fountains and picnic tables through selective location of equipment and by appropriate irrigation system design. Additionally, the following measures should be taken: recycled wastewater spraying shall be done during hours of least public exposure; any area where recycled wastewater is released, used or impounded should be posted, informing the public that recycled water is being used; and irrigation practices utilizing recycled water shall be controlled to prevent surface runoff.

BACKFLOW PROTECTION

- There shall be no interconnection between a potable water system and a recycled / reclaimed water system within the user's premises.
- A dye or pressure test shall be utilized to confirm the physical separation of a recycled wastewater system and a potable water system. Testing shall be performed in conjunction with the Water Purveyor and this Department and conducted before the introduction of recycled wastewater.
- An approved backflow prevention device shall be installed at the potable water service connection.
- In a recycled / reclaimed wastewater distribution system, a backflow prevention device may be required at the recycled wastewater meter or at specific on-site locations where said use could degrade the quality of the recycled wastewater supply.



RECYCLED / RECLAIMED WASTEWATER SYSTEMS SHALL BE CONSTRUCTED IN COMPLIANCE WITH APPLICABLE POTABLE WATER SYSTEM CONSTRUCTION STANDARDS AS WELL AS THOSE SPECIFIED IN "THE PURPLE BOOK", CALIFORNIA HEALTH LAWS RELATED TO RECYCLED WATER, (CALIFORNIA HEALTH AND SAFETY CODE, WATER CODE, TITLES 22 AND 17 OF THE CALIFORNIA CODE OF REGULATIONS) AND THE LOS ANGELES COUNTY CODE (LACC), TITLE 28 – PLUMBING, APPENDIX J.

PRELIMINARY REQUIREMENTS

- Plans and specifications for recycled / reclaimed wastewater distribution systems, as well as the use and operation of such systems shall be submitted to the Department for review and approval prior to construction or implementation.
- Prior to commencing construction, the Contractor shall contact the Department to schedule an inspection of the proposed on-site recycled / reclaimed and potable water work.
- No piping for potable or recycled / reclaimed water in conjunction with a specified project shall be installed prior to plan check approval and preliminary inspection.
- Upon completion of construction, no excavation or open trench may be backfilled without first securing the Department approval. Any areas backfilled without prior approval will be required to be exposed and corrected as necessary.
- Only a Department approved temporary water connection, to a potable water supply via a dedicated, approved, reduced-pressure-principle backflow prevention device shall be permitted to be utilized for the purpose of flushing, pressure testing, construction, landscape use or the final cross-connection testing.

SEPARATION REQUIREMENTS

The maximum attainable separation of recycled / reclaimed wastewater lines and potable water lines shall be enforced in order to minimize potential risks associated with pipeline breaks resulting in infiltration of wastewater from leaking wastewater lines into domestic water lines, or accidental cross-connections between recycled wastewater and potable water systems.

- Parallel Construction:** A horizontal separation of at least ten feet (10') shall be required between pressurized, buried, recycled / reclaimed and potable water piping (all distance to be measured from pipeline outside diameter).

- Cross-Over Construction:** Buried potable water pipes crossing over pressurized recycled / reclaimed water pipes shall be laid not less than twelve inches (12") above the reclaimed water pipes. Reclaimed water pipes laid in the same trench or crossing-over building sewer or drainage piping shall be installed in compliance with the LACC – Title 28, Plumbing, Sections 609.0 and 720.0.
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PIPELINE MATERIALS AND IDENTIFICATION

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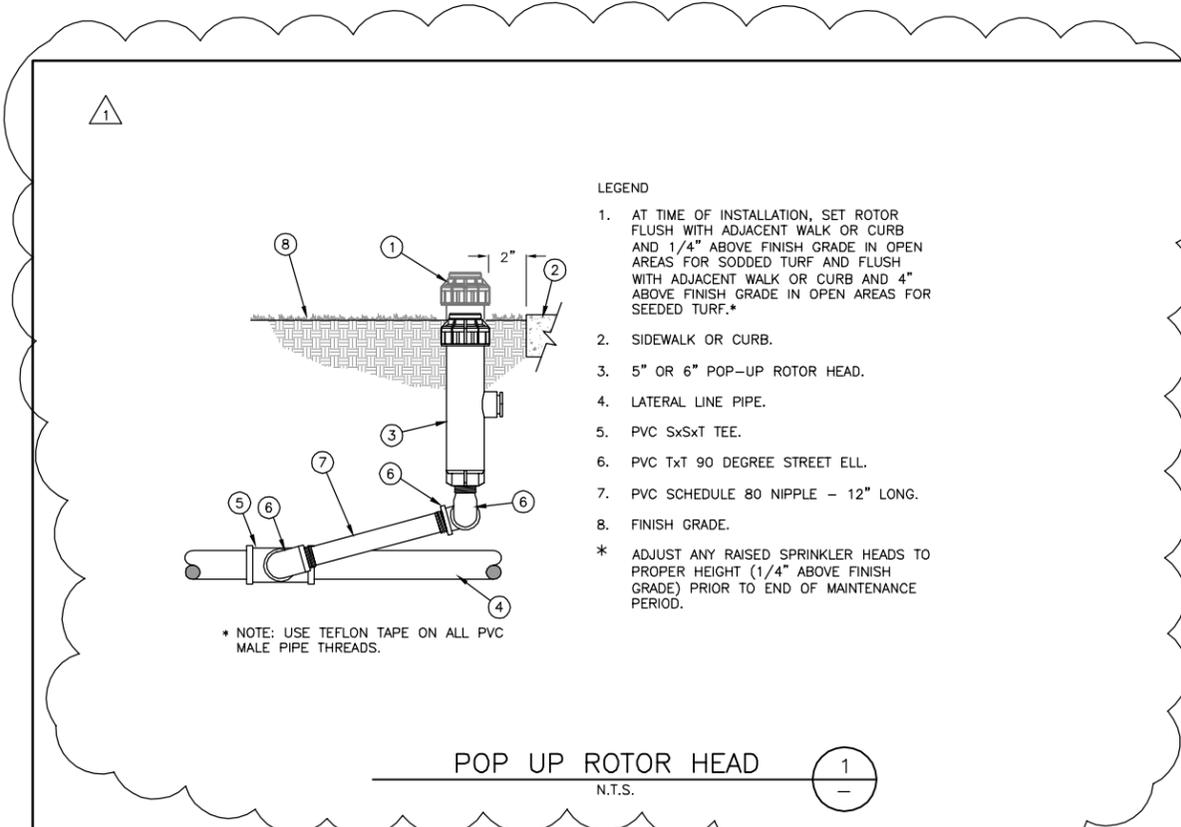
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- Non-Potable Water:** All non-potable irrigation / industrial water lines (pressure / non-pressure) shall be identified by continuous lettering on three inch (3") minimum width tape with one inch (1") contrasting lettering bearing the continuous uppercase lettering "NON-POTABLE WATER – DO NOT DRINK" permanently affixed at ten foot (10') intervals atop all horizontal piping, laterals and mains. Identification tape shall extend to all valve boxes and / or vaults, exposed piping, hydrants and quick couplers. Exposed piping, valve boxes, vaults, control valves, quick coupling valves, outlets and related appurtenances shall be color-coded and labeled / tagged to differentiate between recycled / reclaimed wastewater, potable water and non-potable water systems. Tags identifying recycled / reclaimed water shall have the appropriate identification on both sides (wording on one side and symbol on the opposite side).



THE SAFE USE OF RECYCLED / RECLAIMED WATER PROTECTS POTABLE WATER

- Deteriorated or inadequately-protected well water casings shall be repaired or replaced to protect aquifers against contamination from recycled / reclaimed wastewater systems.
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▲	DPH COMMENTS	TLE	01/12	SCALE	AS NOTED
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				FILENAME	WTD02
REV	DESCRIPTION	ENGR	DATE	APPD	DATE
				DESIGNED BY	CH
				DRAWN BY	EAC
				CHECKED BY	MWB



PLANS PREPARED BY:
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WEST BASIN MUNICIPAL WATER DISTRICT
EXPANDING RECYCLED WATER SERVICE

LA PALOMA PARK
DPH RECYCLED WATER GUIDELINES

PROJECT NO.
3915.0011.00
DWG. NO. 4 OF 4