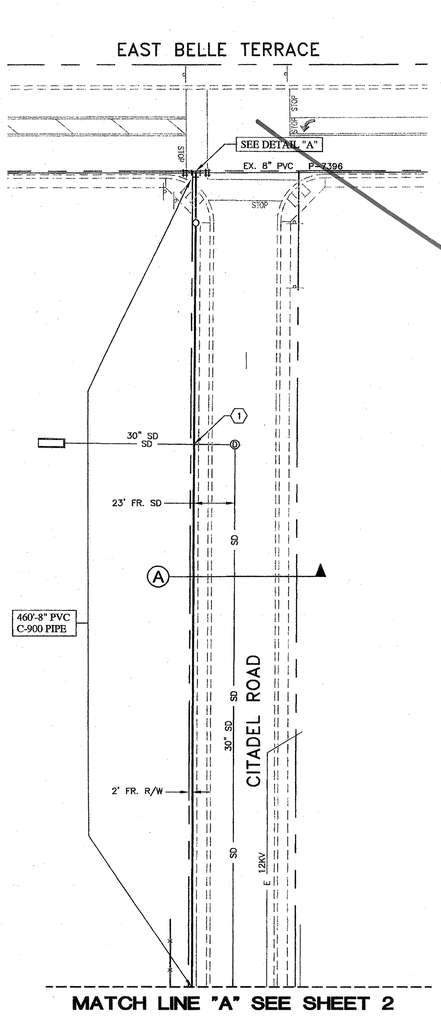


BILL OF MATERIALS

8" PVC

1820'–8" PVC C–900 PIPE
2000'–LINEGUARD TAPE
2000'–TRACER WIRE #12AWG SOLID COPPER WIRE W/ 45 MILS OF HMWPE INSULATION
5–8" GATE VALVE PO
5–VALVE CASING & COVER ASSY
1–8" TEE
2–8" ELL 45° PO
21–8" RINGS F/PO FITTINGS
50'–POLYWRAP F/DI FITTINGS

(1) TIE–IN MATERIALS PER DETAIL "A"
(1) TIE–IN MATERIALS PER DETAIL "B"

8" DI

50'–8" DUCTILE IRON PIPE W/ RESTRAINT GASKETS
55'–LINEGUARD TAPE
55'–TRACER WIRE #12AWG SOLID COPPER WIRE W/ 45 MILS OF HMWPE INSULATION
75'–POLYWRAP F/DI FITTINGS

SERVICES

1–4" DOMESTIC SERVICE, SEE DETAIL CW–785 ON THIS SHEET FOR TYPICAL MATERIALS
1–4" IRRIGATION SERVICE, SEE DETAIL CW–785 ON THIS SHEET FOR TYPICAL MATERIALS

FIRE SERVICES

2–8" FIRE SERVICES
1–8" TEE PO

SEE DRAWING CW–840 FOR TYPICAL MATERIALS

FIRE HYDRANTS

2–6" FIRE HYDRANTS
2–8" x 6" TEE PO

SEE NOTE #18 FOR TYPICAL MATERIALS

WORK BY CWS

4–RELOCATE EX. METER BEHIND SIDEWALK

NOTE: WHEN ASSEMBLING A PVC C–900 PIPE TO AN IRON FITTING (PUSH–ON OR MECHANICAL JOINT), REMOVE ALL BUT 1/4 INCH OF THE FACTORY MADE BEVEL FROM THE SPIGOT END OF THE PIPE PRIOR TO INSTALLATION.

SUMMARY

1820'– 8" PVC C–900 PIPE
50'– 8" DUCTILE IRON PIPE
1– 4" DOMESTIC SERVICE
1– 4" IRRIGATION SERVICE
2– 8" FIRE SERVICES
2– 6" FIRE HYDRANTS

WORK BY CWS
2–TIE–IN TO EX. MAIN PER DETAILS A & B
4–RELOCATE EX. METER BEHIND SIDEWALK

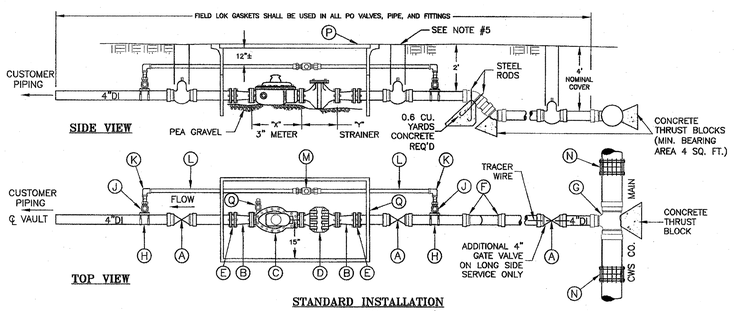
MATERIALS			
KEY	QTY.		ITEM
A	3	(*)	4" GATE VALVE PO, W/ FIELD LOK GASKETS. (ADDITIONAL GATE VALVE FOR LONG SIDE SERVICE)
B	2		4" x 3" REDUCER, DI CL, FLG (USE WITH "MEGAFLANGE")
C	1		3" METER, PROVIDED BY C.W.S. CO.
D	1		3" STRAINER, PROVIDED BY C.W.S. CO.
E	2		4" MEGAFLANGE RESTRAINED FLANGE ADAPTOR
F	2		4" ELL 45° PO CL DI, W/ FIELD LOK GASKETS
G	1		8" x 4" TEE PO CL DI, W/ FIELD LOK GASKETS
H	2		4.80" x 2" CC SADDLE, DOUBLE STRAP (SEE NOTE #8)
J	2		2" BALL CORPORATION STOP, 2" CC x PEP, MUELLER E–25009N, FORD FB1001–7–IDR7–NL, A.Y. McDONALD 747019–33 OR CAMBRIDGE BRASS 301NL–A7PE7
K	2		2" ELL 90° COUPLING, PEP x PEP, FORD L66–77–IDR7–NL, A.Y. McDONALD 74761–33 OR CAMBRIDGE BRASS 105NL–PE7PE7
L		*	2" HDPE PIPE, HIGH DENSITY POLYETHYLENE PIPE, IRON PIPE SIZE, AWWA STANDARD C901, PE 3408, PC 200, IDR7
M	1		2" BALL VALVE, PEP x PEP, 360 DEGREE ROTATION, MUELLER 300 E25211N–3 OR FORD B66–777NL–DR7
N	2		COUPLING OR SLEEVE FOR TIE–IN
P	1		OUTSIDE FULL TRAFFIC AREAS, 30" x 48" x 18" DEEP POLYMER CONCRETE METER BOX WITH ONE 18" EXTENSION AND SPLIT COVER ARMORCAST (A6001430APCX1B, BOX) (A8001470, SPLIT COVER, SOLID) AND (A6001470DZ, SPLIT COVER, WITH READING LID). IN FULL TRAFFIC AREAS, 30" x 48" CONCRETE BOX, BROOKS NO. 68, OR CHRISTY B48 WITH TWO EXTENSIONS AND SPLIT COVER WITH READING LID. IF METER BOX IS LOCATED IN CONCRETE OR PAVED AREA, THEN A STEEL 2 PIECE COVER WITH READING LID IS REQUIRED.
Q	1		2" BALL VALVE F.I.P. THREAD, 360 DEGREE ROTATION, MUELLER 300 B–20283N–3, FORD B11–777NL–R, A.Y. McDONALD 76101, OR MILWAUKEE UPBA100 W/ 2" x 12" BRASS NIPPLE AND BRASS PLUG (SEE NOTE #11).
–	*		4" FIELD LOK GASKET (PLUS GASKETS FOR ADDITIONAL PIPE, FITTINGS, OR VALVES)
–	*		4" DUCTILE IRON PIPE, CLASS 350 PO
R	1		2" BALL CORPORATION VALVE, 2" CC x 2" M.I.P. MUELLER B–2996N, FORD FB400NL–7, A.Y. McDONALD 73121B W/ 2 BRASS COUPLINGS, 2" x 12" BRASS NIPPLE AND BRASS PLUG (SEE NOTE #11)

* DETERMINE QUANTITY SPECIFIC TO PROJECT

METER AND STRAINER LENGTHS			
MAKE	3" METER LENGTH X		3" STRAINER LENGTH Y
	COMPOUND	TURBO	
SCHLUMBERGER	17"	12"	6"
INVENSYS	17"	12"	7"
BADGER	17"	12"	7"

NOTES:

1. ALL FLANGES TO BE 125 LB. STANDARD DRILLING.
2. ITEMS "C" & "D" PROVIDED BY C.W.S. CO. WITH ONE SET OF BOLTS, NUTS, & GASKET.
3. BACKFLOW PREVENTION ASSEMBLIES SHALL BE DOWNSTREAM OF SERVICE INSTALLATION.
4. CENTER METER BOX OVER METER AND STRAINER, SEE PLAN VIEW.
5. ALL VALVES OUTSIDE THE CONCRETE BOX REQUIRE VALVE CASING & COVER PER LATEST REVISION OF DWG. CW–14 AND CW–439.
6. ALL UNDERGROUND MJ, BOLTS, NUTS, AND BARE STEEL SHALL BE PROTECTED BY METALGUARD GREASE AND BIT WRAP PER THE CWS CO. PROTECTION COATING STANDARD.
7. SEE LATEST REVISION OF DRAWING CW–435 FOR TYPICAL THRUST BLOCK INSTALLATION.
8. SADDLE MATERIAL SHALL BE BRONZE WITH P.V.C., A.C. PIPE AND IRON WITH D.I. PIPE. MANUFACTURERS AND MODELS SHALL BE PER LATEST REVISION OF STD. 2" SERVICE CONN. DWG. CW–426.
9. SEE LATEST REVISION OF DRAWING CW–850 FOR TRACER WIRE INSTALLATION.
10. A MINIMUM OF 5 PIPE DIAMETERS OF STRAIGHT RUN PIPE OR FULL OPEN FLOW COMPONENTS (STRAINER, FULL OPEN GATE VALVES, BYPASS TEES OR CONCENTRIC REDUCERS) IS RECOMMENDED UPSTREAM OF THE METER.
11. INSTALL 2" x 12" BRASS NIPPLE WITH BRASS BALL VALVE AND BRASS PLUG (Q) INTO METER TEST PORT. IF METER DOES NOT HAVE A TEST PORT, INSTALL 2" x 12" BRASS NIPPLE, COUPLINGS, NIPPLE AND BRASS PLUG (R) INTO A 2" SADDLE (H) DOWNSTREAM OF THE METER. (INSIDE THE METER BOX)
12. ALL PIPE FITTINGS IN CONTACT WITH POTABLE WATER SHALL BE LEAD FREE (<0.25% LEAD) AND COMPLIANT TO LATEST REVISION OF NSF–61/SECTION 8.
13. THE METER AND METER BOX MUST BE LOCATED IN AN AREA CONDUCIVE TO THE PERFORMANCE OF ROUTINE METER MAINTENANCE AND OUTSIDE OF VEHICLE AND PEDESTRIAN TRAVELED AREAS WHENEVER POSSIBLE AND APPROPRIATE.

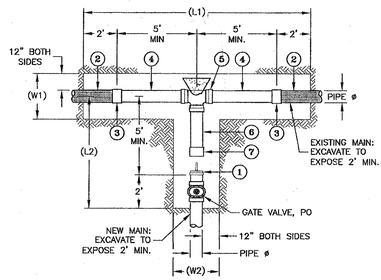


STANDARD INSTALLATION
N.T.S.

CW 785R11

STANDARD 4" SERVICE CONNECTION FOR 3" METER WITH STRAINER

NOTE: IF UNFORESEEN CIRCUMSTANCES OR FIELD CONDITIONS ARISE THAT REQUIRE ALTERNATE OR ADDITIONAL MATERIALS FOR THE TIE–IN TO THE EXISTING SYSTEM, THE DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THIS MATERIAL TO THE COMPANY TO COMPLETE THE TIE–IN.



TIE–IN DETAIL "A"
N.T.S.

1. DEVELOPER'S CONTRACTOR SHALL INSTALL NEW MAIN AND ADJUST FROM NOMINAL LINE AND GRADE TO MATCH EXISTING FACILITIES AT THIS LOCATION. THE DEVELOPER'S CONTRACTOR SHALL INSTALL A TEMPORARY CAP AND BLOWOFF AT THIS LOCATION.

CALIFORNIA WATER SERVICE WILL TIE THE NEW MAIN FROM THIS LOCATION.

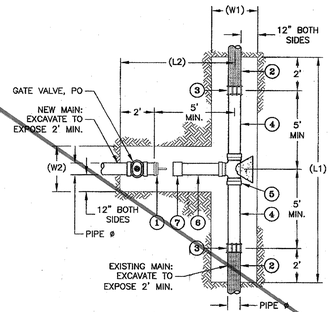
2. EXISTING MAIN, 8" PVC C–900 PIPE

THE DEVELOPER'S CONTRACTOR SHALL PROVIDE CALIFORNIA WATER SERVICE WITH THE FOLLOWING MATERIALS FOR THE TIE–IN IT WILL MAKE AT EAST BELLE TERRACE AND CITADEL ROAD.

3. 1 – 8" "CERTAINTEED" PVC CLOSURE COUPLING (2 TOTAL)
4. 5' – 8" PVC C–900 PIPE (10' TOTAL)
5. 1 – 8" TEE PO w/ 3–8" RINGS
6. 5' – 8" PVC C–900 PIPE
7. 1 – 8" "CERTAINTEED" PVC CLOSURE COUPLING

NOTE: IN ADDITION, THE DEVELOPER'S CONTRACTOR SHALL PROVIDE: MISC. MATERIAL REQUIRED TO COMPLETE THE TIE–IN SUCH AS, BUT NOT LIMITED TO: PROTECTION COATING MATERIAL FOR PIPE & FITTINGS, LINEGUARD TAPE, CONCRETE FOR THRUST BLOCKS, EMBEDMENT BACKFILL AROUND AND OVER THE PIPE, FINAL BACKFILL TO MEET COMPACTION REQUIREMENTS, AND PAVEMENT REPLACEMENT.

NOTE: IF UNFORESEEN CIRCUMSTANCES OR FIELD CONDITIONS ARISE THAT REQUIRE ALTERNATE OR ADDITIONAL MATERIALS FOR THE TIE–IN TO THE EXISTING SYSTEM, THE DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THIS MATERIAL TO THE COMPANY TO COMPLETE THE TIE–IN.



TIE–IN DETAIL "B"
N.T.S.

1. DEVELOPER'S CONTRACTOR SHALL INSTALL NEW MAIN AND ADJUST FROM NOMINAL LINE AND GRADE TO MATCH EXISTING FACILITIES AT THIS LOCATION. THE DEVELOPER'S CONTRACTOR SHALL INSTALL A TEMPORARY CAP AND BLOWOFF AT THIS LOCATION.

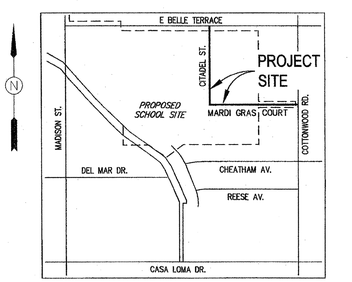
CALIFORNIA WATER SERVICE WILL TIE THE NEW MAIN FROM THIS LOCATION.

2. EXISTING MAIN, 8" AC PIPE

THE DEVELOPER'S CONTRACTOR SHALL PROVIDE CALIFORNIA WATER SERVICE WITH THE FOLLOWING MATERIALS FOR THE TIE–IN IT WILL MAKE AT COTTONWOOD ROAD AND MARDI GRAS COURT.

3. 1 – 8" ACRB x DI FLEX COUPLING, 10" SLEEVE (2 TOTAL)
4. 5' – 8" PVC C–900 PIPE (10' TOTAL)
5. 1 – 8" TEE PO w/ 3–8" RINGS
6. 5' – 8" PVC C–900 PIPE
7. 1 – 8" "CERTAINTEED" PVC CLOSURE COUPLING

NOTE: IN ADDITION, THE DEVELOPER'S CONTRACTOR SHALL PROVIDE: MISC. MATERIAL REQUIRED TO COMPLETE THE TIE–IN SUCH AS, BUT NOT LIMITED TO: PROTECTION COATING MATERIAL FOR PIPE & FITTINGS, LINEGUARD TAPE, CONCRETE FOR THRUST BLOCKS, EMBEDMENT BACKFILL AROUND AND OVER THE PIPE, FINAL BACKFILL TO MEET COMPACTION REQUIREMENTS, AND PAVEMENT REPLACEMENT.



VICINITY MAP
N.T.S.

LEGEND:

- = TEE
- = ELBOW, 45°
- = ELBOW, 90°
- = BLOWOFF (PROPOSED)
- = BLOWOFF (EXISTING)
- = GATE VALVE (PROPOSED)
- = GATE VALVE (EXISTING)
- = REDUCER (PROPOSED)
- = REDUCER (EXISTING)
- = SOLID PLUG
- = PROPOSED WATER MAIN
- = EXISTING WATER MAIN
- = SANITARY SEWER
- = STORM DRAIN
- = FIRE HYDRANT (PROPOSED)
- = FIRE HYDRANT (EXISTING)
- = BUTTERFLY VALVE
- = CHECK VALVE
- = FLEX CPLG.

NOTES:

1. Inspection of all materials and installation for pipeline, hydrants and services must be made by California Water Service. Telephone: (661) 832–2141 at least 48 hours before starting work on water facilities.
2. Any easements and rights–of–way which may be necessary or reasonably appropriate for the extension will be conveyed or caused to be conveyed by the applicant.
3. Contact Underground Service Alert at (800) 642–2444 at least 48 hours prior to the commencement of this project.
4. Place a continuous wire and strip of detector tape over all pipe and extend up into all valve boxes. Tracer wire is required on all pipe.
5. For details of typical thrust block installation, see latest revision of drawing CW–435.
6. Protect underground flexible couplings, bare steel, MJxMJ sleeves, and all bolts (including stainless steel) as follows:
   a. The entire area of the fitting must be dry and free of dust, dirt, and other foreign matter. Rust or other foreign matter must be removed by scraping or wire brushing. Wiping with a dry clean cloth may be necessary to remove the particles from brush cleaning. Any oil or grease must be removed by using a low residue, volatile petroleum solvent before application of grease and wrapping.
   b. The exposed area should be coated with a heavy coating of Metalguard 301 grease by the glove method to a thickness of at least 1/4".
   c. Firmly wrap the entire grease area with one layer, half lapped of a woven glass filament mesh (Res or Bit Wrap, 4" wide).
   d. Apply a second layer of Metalguard 301 grease on top of the glass filament by the glove method to a thickness of at least 1/4".
   e. Firmly wrap the entire grease area with a second layer, half lapped of the woven glass filament mesh.
   f. Cover the entire mesh wrapped area of the fitting with a third and final coating at least 1/4" thick of Metalguard 301 grease by the glove method.
   g. Firmly apply 2 layers of polywrap, half lapped over all areas of the coated and wrapped fitting. Backfilling may follow immediately after this wrapping.
7. Water main shall be installed at least 10 ft. horizontally from and one foot higher than storm and sanitary sewers located parallel to the main if feasible. Center a 20 foot length at all storm and sanitary sewer crossings. Minimum separation between sewer and water main shall be one foot unless otherwise indicated.
8. No valve covers or meter boxes are to lie in sidewalks, cross gutter, curb or driveways. Each service should also be located to provide protection to the meter box from auto traffic and parking.
9. The exact location of each service to be determined at the time of installation to avoid conflicts with other utilities. Therefore, the number of long, short and split services may vary. Preferred CWS location to be staked and installed by developer's engineer. Any relocations after installation will be at developer's expense.
10. Location of blow–off in new street area will terminate where street improvement ends.
11. Services installed across street area will need import backfill when government agency's compaction requirements cannot be met with native backfill.
12. It is the responsibility of the contractor to verify the exact location and depth of all existing and proposed facilities prior to water main installation.
13. The list of materials for this project is for CWS estimating and reference purposes only and is not intended as a full take–off of material required.
14. The water supply for this development is from local underground aquifers. Additional wells for replacement and pressure will be required in the future.
15. Developer shall obtain all permits necessary for the installation of the facilities.
16. This water plan design is based on incomplete and unapproved improvement plans. Therefore, sewers, storm drains and street grading conflicts may occur.
17. Contractor to ensure air in the pipeline is removed using existing outlets, such as fire hydrants and blowoffs. Contractor is responsible for installing air releases if existing outlets are insufficient.
18. ⊙ = Indicates fire hydrant (Bakersfield)

    Limits of CWS ownership for each hydrant:
    1 – 6 Inch Fire Hydrant (See Below)
    1 – 6 Inch Outlet Tee PO, DI
    1 – 6 Inch Gate Valve PO
    3 – 6 Inch Restraint PO Gaskets
    1 – Valve Casing & Cover Assembly
    +/– 10 Feet of 6 Inch Ductile Iron Pipe
    1 – 6x42 Inch Fire Hydrant Bury FLGxMJ
    1 – 6x12 Inch Fire Hydrant Extension
    1 – Set 3/4" x 3–1/2" #304 SS Bolts & Nuts, and Gaskets for Hydrant
    1 – Set 3/4" x 3–1/2" SS Bolts & Nuts, and Gaskets for Hydrant Break–off

    Polywrap Tubing, PVC Tape, Line Guard and Misc. Coating Material.

    IF FIELD CONDITIONS OR FIRE PROTECTION AGENCY REQUIRE AN ALTERNATIVE INSTALLATION, THE OUTLET TEE AND GATE VALVE MAY BE REPLACED WITH:
    1 – 6 Inch Outlet Tee POxFLG, DI
    1 – 6 Inch Gate Valve FLGxPO
    1 – 6 inch Gasket for Flanged Joint
    1 – Set 3/4" x 3–1/2" #304 SS Bolts & Nuts, and Gaskets

    FIRE HYDRANT:
    CITY: CLOW 850 2–1/2 & 4" NST
    KERN COUNTY: CLOW 850 2–1/2 & 4–1/2

    (the fire chief will make the final choice of fire hydrant head with Cal Water approval.)

    A break–off check valve may be required if specified by district personnel. Use Clow Model LB400 or approved equal.
19. Install water main with 4 ft. minimum clearance from all storm drain structures. If needed, use 45° elbow fittings or deflect the pipe to obtain required clearance.
20. California Water Service Company will require proof of PUE, a pipeline right–of–way over private street, or a 20 ft. water easement for proposed water facilities.

ENGINEERING

CALIFORNIA WATER SERVICE

DEPARTMENT

REVISIONS:

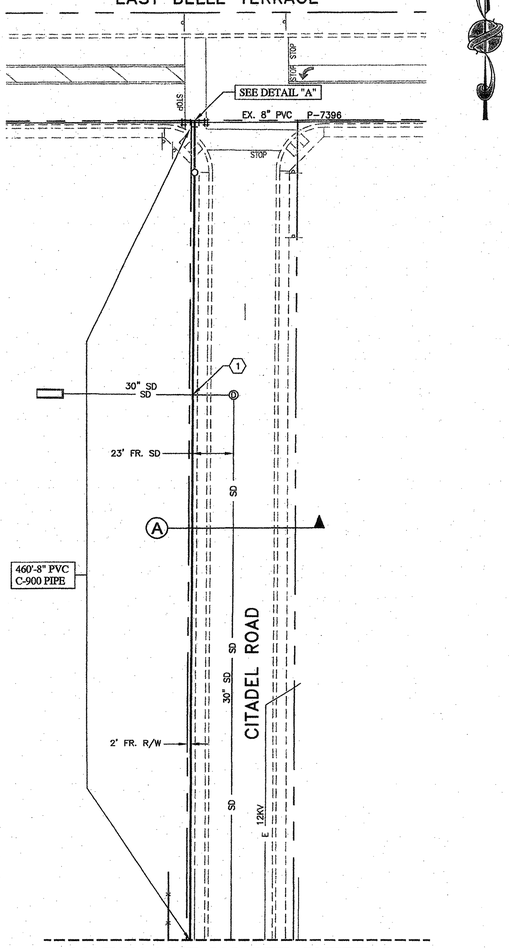
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DISTRIBUTION MAP	X	
PLAT SHEET	X	
SYSTEM SCHEMATIC	☐	
STATION SCHEMATIC	☐	

PLAT SHEET NO.:
BAK–36–39
SCALE:
1"=40'
DRAWN BY:
D. STOIA
DESIGNED BY:
J. GONG
CHECKED BY: DATE:
3/22/2018
APPROVED BY: DATE:
T.H. 3/22/2018

REGISTERED PROFESSIONAL ENGINEER
TING MET
No. C060340
EXP. 06–30–18
CIVIL
STATE OF CALIFORNIA

TITLE:
BELLE TERRACE SCHOOL SITE BCSD

DISTRICT:
BAKERSFIELD
DATE:
3/22/18
PROJECT ID.:
117102
DRAWING NO.:
BAK–11491
SHT 1 OF 2



MATCH LINE "A" SEE SHEET 2

BILL OF MATERIALS

8" PVC

1820'-8" PVC C-900 PIPE
2000'-LINEGUARD TAPE
2000'-TRACER WIRE #12AWG SOLID COPPER WIRE W/ 45 MILS OF HMWPE INSULATION
5-8" GATE VALVE PO
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50'-POLYWRAP F/DI FITTINGS

(1) TIE-IN MATERIALS PER DETAIL "A"
(1) TIE-IN MATERIALS PER DETAIL "B"

8" DI

50'-8" DUCTILE IRON PIPE W/ RESTRAINT GASKETS
55'-LINEGUARD TAPE
55'-TRACER WIRE #12AWG SOLID COPPER WIRE W/ 45 MILS OF HMWPE INSULATION
75'-POLYWRAP F/DI FITTINGS

SERVICES

1-4" DOMESTIC SERVICE, SEE DETAIL CW-785 ON THIS SHEET FOR TYPICAL MATERIALS
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FIRE SERVICES

2-8" FIRE SERVICES
1-8" TEE PO

SEE DRAWING CW-840 FOR TYPICAL MATERIALS

FIRE HYDRANTS

2-6" FIRE HYDRANTS
2-8" x 6" TEE PO

SEE NOTE #18 FOR TYPICAL MATERIALS

WORK BY CWS

4-RELOCATE EX. METER BEHIND SIDEWALK

NOTE: WHEN ASSEMBLING A PVC C-900 PIPE TO AN IRON FITTING (PUSH-ON OR MECHANICAL JOINT), REMOVE ALL BUT 1/4 INCH OF THE FACTORY MADE BEVEL FROM THE SPIGOT END OF THE PIPE PRIOR TO INSTALLATION.

SUMMARY

1820'- 8" PVC C-900 PIPE
50'- 8" DUCTILE IRON PIPE
1- 4" DOMESTIC SERVICE
1- 4" IRRIGATION SERVICE
2- 8" FIRE SERVICES
2- 6" FIRE HYDRANTS

WORK BY CWS
2-TIE-IN TO EX. MAIN PER DETAILS A & B
4-RELOCATE EX. METER BEHIND SIDEWALK

MATERIALS

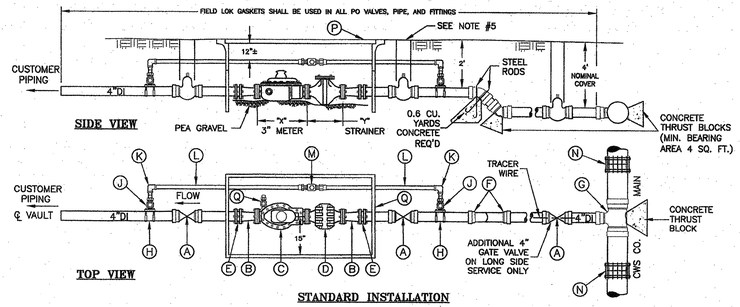
KEY	QTY.	ITEM
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D	1	3" STRAINER, PROVIDED BY C.W.S. CO.
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F	2	4" ELL 45° PO CL DI, W/ FIELD LOK GASKETS
G	1	8" x 4" TEE PO CL DI, W/ FIELD LOK GASKETS
H	2	4.80" x 2" CC SADDLE, DOUBLE STRAP (SEE NOTE #8)
J	2	2" BALL CORPORATION STOP, 2" CC x PEP, MUELLER E-25009N, FORD FB1001-7-IDR7-NL, A.Y. McDONALD 74701B-33 OR CAMBRIDGE BRASS 301NL-A7PE7
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L	*	2" HDPE PIPE, HIGH DENSITY POLYETHYLENE PIPE, IRON PIPE SIZE, AWWA STANDARD C901, PE 3408, PC 200, IDR7
M	1	2" BALL VALVE, PEP x PEP, 360 DEGREE ROTATION, MUELLER 300 E25211N-3 OR FORD B66-777NL-DR7
N	2	COUPLING OR SLEEVE FOR TIE-IN
P	1	OUTSIDE FULL TRAFFIC AREAS, 30" x 48" x 18" DEEP POLYMER CONCRETE METER BOX WITH ONE 18" EXTENSION AND SPLIT COVER ARMORCAST (A6001430APCX18, BOX) (A6001470, SPLIT COVER, SOLID) AND (A6001470DZ, SPLIT COVER, WITH READING LID). IN FULL TRAFFIC AREAS, 30" x 48" CONCRETE BOX, BROOKS NO. 68, OR CHRISTY B48 WITH TWO EXTENSIONS AND SPLIT COVER WITH READING LID. IF METER BOX IS LOCATED IN CONCRETE OR PAVED AREA, THEN A STEEL 2 PIECE COVER WITH READING LID IS REQUIRED.
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–	*	4" FIELD LOK GASKET (PLUS GASKETS FOR ADDITIONAL PIPE, FITTINGS, OR VALVES)
–	*	4" DUCTILE IRON PIPE, CLASS 350 PO
R	1	2" BALL CORPORATION VALVE, 2" CC x 2" M.I.P. MUELLER B-2996N, FORD FB400NL-7, A.Y. McDONALD 731218 W/ 2 BRASS COUPLINGS, 2" x 12" BRASS NIPPLE AND BRASS PLUG (SEE NOTE #11)

* DETERMINE QUANTITY SPECIFIC TO PROJECT

METER AND STRAINER LENGTHS			
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	COMPOUND	TURBO	
SCHLUMBERGER	17"	12"	6"
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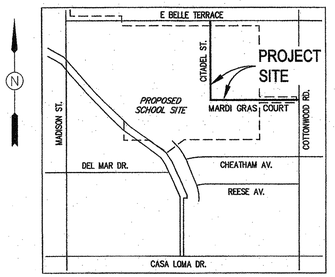
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3. BACKFLOW PREVENTION ASSEMBLIES SHALL BE DOWNSTREAM OF SERVICE INSTALLATION.
4. CENTER METER BOX OVER METER AND STRAINER, SEE PLAN VIEW.
5. ALL VALVES OUTSIDE THE CONCRETE BOX REQUIRE VALVE CASING & COVER PER LATEST REVISION OF DWG. CW-14 AND CW-439.
6. ALL UNDERGROUND MJ, BOLTS, NUTS, AND BARE STEEL SHALL BE PROTECTED BY METALGUARD GREASE AND BIT WRAP PER THE CWS CO. PROTECTION COATING STANDARD.
7. SEE LATEST REVISION OF DRAWING CW435 FOR TYPICAL THRUST BLOCK INSTALLATION.
8. SADDLE MATERIAL SHALL BE BRONZE WITH P.V.C., A.C. PIPE AND IRON WITH D.I. PIPE. MANUFACTURERS AND MODELS SHALL BE PER LATEST REVISION OF STD. 2" SERVICE CONN. DWG. CW-436.
9. SEE LATEST REVISION OF DRAWING CW-850 FOR TRACER WIRE INSTALLATION.
10. A MINIMUM OF 5 PIPE DIAMETERS OF STRAIGHT RUN PIPE OR FULL OPEN FLOW COMPONENTS (STRAINER, FULL OPEN GATE VALVES, BYPASS TEES OR CONCENTRIC REDUCERS) IS RECOMMENDED UPSTREAM OF THE METER.
11. INSTALL 2" x 12" BRASS NIPPLE WITH BRASS BALL VALVE AND BRASS PLUG (Q) INTO METER TEST PORT. IF METER DOES NOT HAVE A TEST PORT, INSTALL 2" x 12" BRASS NIPPLE, COUPLINGS, NIPPLE AND BRASS PLUG (R) INTO A 2" SADDLE (H) DOWNSTREAM OF THE METER. (INSIDE THE METER BOX)
12. ALL PIPE FITTINGS IN CONTACT WITH POTABLE WATER SHALL BE LEAD FREE (<0.25% LEAD) AND COMPLIANT TO LATEST REVISION OF NSF-61/SECTION 8.
13. THE METER AND METER BOX MUST BE LOCATED IN AN AREA CONDUCIVE TO THE PERFORMANCE OF ROUTINE METER MAINTENANCE AND OUTSIDE OF VEHICLE AND PEDESTRIAN TRAVELED AREAS WHENEVER POSSIBLE AND APPROPRIATE.



STANDARD INSTALLATION
N.T.S.

CW 785R11 — STANDARD 4" SERVICE CONNECTION FOR 3" METER WITH STRAINER

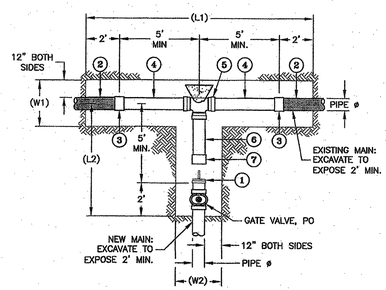


VICINITY MAP
N.T.S.

LEGEND:

- = TEE
- = ELBOW, 45°
- = ELBOW, 90°
- = BLOWOFF (PROPOSED)
- = BLOWOFF (EXISTING)
- = GATE VALVE (PROPOSED)
- = GATE VALVE (EXISTING)
- = REDUCER (PROPOSED)
- = REDUCER (EXISTING)
- = SOLID PLUG
- = PROPOSED WATER MAIN
- = EXISTING WATER MAIN
- = SANITARY SEWER
- = STORM DRAIN
- = FIRE HYDRANT (PROPOSED)
- = FIRE HYDRANT (EXISTING)
- = BUTTERFLY VALVE
- = CHECK VALVE
- = FLEX CPLG.

NOTE: IF UNFORESEEN CIRCUMSTANCES OR FIELD CONDITIONS ARISE THAT REQUIRE ALTERNATE OR ADDITIONAL MATERIALS FOR THE TIE-IN TO THE EXISTING SYSTEM, THE DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THIS MATERIAL TO THE COMPANY TO COMPLETE THE TIE-IN.



TIE-IN DETAIL "A"
N.T.S.

1. DEVELOPER'S CONTRACTOR SHALL INSTALL NEW MAIN AND ADJUST FROM NOMINAL LINE AND GRADE TO MATCH EXISTING FACILITIES AT THIS LOCATION. THE DEVELOPER'S CONTRACTOR SHALL INSTALL A TEMPORARY CAP AND BLOWOFF AT THIS LOCATION.

CALIFORNIA WATER SERVICE WILL TIE THE NEW MAIN FROM THIS LOCATION.

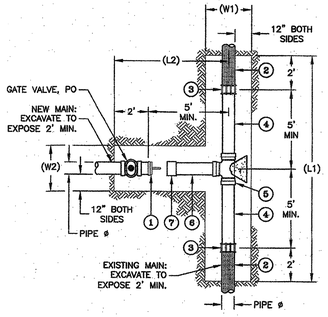
2. EXISTING MAIN, 8" PVC C-900 PIPE

THE DEVELOPER'S CONTRACTOR SHALL PROVIDE CALIFORNIA WATER SERVICE WITH THE FOLLOWING MATERIALS FOR THE TIE-IN IT WILL MAKE AT EAST BELLE TERRACE AND CITADEL ROAD.

3. 1 – 8" "CERTAINTEED" PVC CLOSURE COUPLING (2 TOTAL)
4. 5' – 8" PVC C-900 PIPE (10' TOTAL)
5. 1 – 8" TEE PO w/ 3-8" RINGS
6. 5' – 8" PVC C-900 PIPE
7. 1 – 8" "CERTAINTEED" PVC CLOSURE COUPLING

NOTE: IN ADDITION, THE DEVELOPER'S CONTRACTOR SHALL PROVIDE: MISC. MATERIAL REQUIRED TO COMPLETE THE TIE-IN SUCH AS, BUT NOT LIMITED TO: PROTECTION COATING MATERIAL FOR PIPE & FITTINGS, LINEGUARD TAPE, CONCRETE FOR THRUST BLOCKS, EMBEDMENT BACKFILL AROUND AND OVER THE PIPE, FINAL BACKFILL TO MEET COMPACTION REQUIREMENTS, AND PAVEMENT REPLACEMENT.

NOTE: IF UNFORESEEN CIRCUMSTANCES OR FIELD CONDITIONS ARISE THAT REQUIRE ALTERNATE OR ADDITIONAL MATERIALS FOR THE TIE-IN TO THE EXISTING SYSTEM, THE DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THIS MATERIAL TO THE COMPANY TO COMPLETE THE TIE-IN.



TIE-IN DETAIL "B"
N.T.S.

1. DEVELOPER'S CONTRACTOR SHALL INSTALL NEW MAIN AND ADJUST FROM NOMINAL LINE AND GRADE TO MATCH EXISTING FACILITIES AT THIS LOCATION. THE DEVELOPER'S CONTRACTOR SHALL INSTALL A TEMPORARY CAP AND BLOWOFF AT THIS LOCATION.

CALIFORNIA WATER SERVICE WILL TIE THE NEW MAIN FROM THIS LOCATION.

2. EXISTING MAIN, 8" AC PIPE

THE DEVELOPER'S CONTRACTOR SHALL PROVIDE CALIFORNIA WATER SERVICE WITH THE FOLLOWING MATERIALS FOR THE TIE-IN IT WILL MAKE AT COTTONWOOD ROAD AND MARDI GRAS COURT.

3. 1 – 8" ACRB x DI FLEX COUPLING, 10" SLEEVE (2 TOTAL)
4. 5' – 8" PVC C-900 PIPE (10' TOTAL)
5. 1 – 8" TEE PO w/ 3-8" RINGS
6. 5' – 8" PVC C-900 PIPE
7. 1 – 8" "CERTAINTEED" PVC CLOSURE COUPLING

NOTE: IN ADDITION, THE DEVELOPER'S CONTRACTOR SHALL PROVIDE: MISC. MATERIAL REQUIRED TO COMPLETE THE TIE-IN SUCH AS, BUT NOT LIMITED TO: PROTECTION COATING MATERIAL FOR PIPE & FITTINGS, LINEGUARD TAPE, CONCRETE FOR THRUST BLOCKS, EMBEDMENT BACKFILL AROUND AND OVER THE PIPE, FINAL BACKFILL TO MEET COMPACTION REQUIREMENTS, AND PAVEMENT REPLACEMENT.

NOTES:

1. Inspection of all materials and installation for pipeline, hydrants and services must be made by California Water Service, Telephone: (661) 832-2141 at least 48 hours before starting work on water facilities.
2. Any easements and rights-of-way which may be necessary or reasonably appropriate for the extension will be conveyed or caused to be conveyed by the applicant.
3. Contact Underground Service Alert at (800) 642-2444 at least 48 hours prior to the commencement of this project.
4. Place a continuous wire and strip of detector tape over all pipe and extend up into all valve boxes. Tracer wire is required on all pipe.
5. For details of typical thrust block installation, see latest revision of drawing CW-435.
6. Protect underground flexible couplings, bare steel, MJxMJ sleeves, and all bolts (including stainless steel) as follows:
   a. The entire area of the fitting must be dry and free of dust, dirt, and other foreign matter. Rust or other foreign matter must be removed by scraping or wire brushing. Wiping with a dry clean cloth may be necessary to remove the particles from brush cleaning. Any oil or grease must be removed by using a low residue, volatile petroleum solvent before application of grease and wrapping.
   b. The exposed area should be coated with a heavy coating of Metalguard 301 grease by the glove method to a thickness of at least 1/4".
   c. Firmly wrap the entire grease area with one layer, half lapped of a woven glass filament mesh (Res or Bit Wrap, 4" wide).
   d. Apply a second layer of Metalguard 301 grease on top of the glass filament by the glove method to a thickness of at least 1/4".
   e. Firmly wrap the entire grease area with a second layer, half lapped of the woven glass filament mesh.
   f. Cover the entire mesh wrapped area of the fitting with a third and final coating at least 1/4" thick of Metalguard 301 grease by the glove method.
   g. Firmly apply 2 layers of polywrap, half lapped over all areas of the coated and wrapped fitting. Backfilling may follow immediately after this wrapping.
7. Water main shall be installed at least 10 ft. horizontally from and one foot higher than storm and sanitary sewers located parallel to the main if feasible. Center a 20 foot length at all storm and sanitary sewer crossings. Minimum separation between sewer and water main shall be one foot unless otherwise indicated.
8. No valve covers or meter boxes are to lie in sidewalks, cross gutter, curb or driveways. Each service should also be located to provide protection to the meter box from auto traffic and parking.
9. The exact location of each service to be determined at the time of installation to avoid conflicts with other utilities. Therefore, the number of long, short and split services may vary. Preferred CWS location to be staked and installed by developers's engineer. Any relocations after installation will be at developer's expense.
10. Location of blow-off in new street area will terminate where street improvement ends.
11. Services installed across street area will need import backfill when government agency's compaction requirements cannot be met with native backfill.
12. It is the responsibility of the contractor to verify the exact location and depth of all existing and proposed facilities prior to water main installation.
13. The list of materials for this project is for CWS estimating and reference purposes only and is not intended as a full take-off of material required.
14. The water supply for this development is from local underground aquifers. Additional wells for replacement and pressure will be required in the future.
15. Developer shall obtain all permits necessary for the installation of the facilities.
16. This water plan design is based on incomplete and unapproved improvement plans. Therefore, sewers, storm drains and street grading conflicts may occur.
17. Contractor to ensure air in the pipeline is removed using existing outlets, such as fire hydrants and blowoffs. Contractor is responsible for installing air releases if existing outlets are insufficient.
18. ⊙ = Indicates fire hydrant (Bakersfield)

    Limits of CWS ownership for each hydrant:
    1 – 6 Inch Fire Hydrant (See Below)
    1 – 6 Inch Outlet Tee PO, DI
    1 – 6 Inch Gate Valve PO
    3 – 6 Inch Restraint PO Gaskets
    1 – Valve Casing & Cover Assembly
    +/– 10 Feet of 6 Inch Ductile Iron Pipe
    1 – 6x42 Inch Fire Hydrant Bury FLGxMJ
    1 – 6x12 Inch Fire Hydrant Extension
    1 – Set 3/4" x 3-1/2" #304 SS Bolts & Nuts, and Gaskets for Hydrant
    1 – Set 3/4" x 3-1/2" SS Bolts & Nuts, and Gaskets for Hydrant Break-off

    Polywrap Tubing, PVC Tape, Line Guard and Misc. Coating Material.

    IF FIELD CONDITIONS OR FIRE PROTECTION AGENCY REQUIRE AN ALTERNATIVE INSTALLATION, THE OUTLET TEE AND GATE VALVE MAY BE REPLACED WITH:

    1 – 6 Inch Outlet Tee POxFLG, DI
    1 – 6 Inch Gate Valve FLGxPO
    1 – 6 Inch Gasket for Flanged Joint
    1 – Set 3/4" x 3-1/2" #304 SS Bolts & Nuts, and Gaskets

    FIRE HYDRANT:
    CITY: CLOW 850 2-1/2 & 4 NST
    KERN COUNTY: CLOW 850 2-1/2 & 4-1/2

    (The fire chief will make the final choice of fire hydrant head with Cal Water approval.)

    A break-off check valve may be required if specified by district personnal. Use Clow Model LB400 or approved equal.
19. Install water main with 4 ft. minimum clearance from all storm drain structures. If needed, use 45° elbow fittings or deflect the pipe to obtain required clearance.
20. California Water Service Company will require proof of PUE, a pipeline right-of-way over private street, or a 20 ft. water easement for proposed water facilities.

APPROVED
DIV. OF THE STATE ARCHITECT
LOS ANGELES REGIONAL OFFICE
SS FLS AC
DATE JUL 16 2018

ENGINEERING

CALIFORNIA WATER SERVICE

DEPARTMENT

REVISIONS:

	DATE:	INIT.
DISTRIBUTION MAP	[X]	
PLAT SHEET	[X]	
STATION NUMERATIC	[ ]	
STATION NUMERATIC	[ ]	

PLAT SHEET NO.:
BAK-36-39

SCALE:
1"=40'

DRAWN BY:
D. STOIA

DESIGNED BY:
J. GONG

CHECKED BY: DATE:
John Gong 3/22/2018

APPROVED BY: DATE:
T. H. 3/22/2018

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY MET HOLT
EXP. 06-30-18
CIVIL
STATE OF CALIFORNIA

TITLE:
BELLE TERRACE SCHOOL SITE BCSD

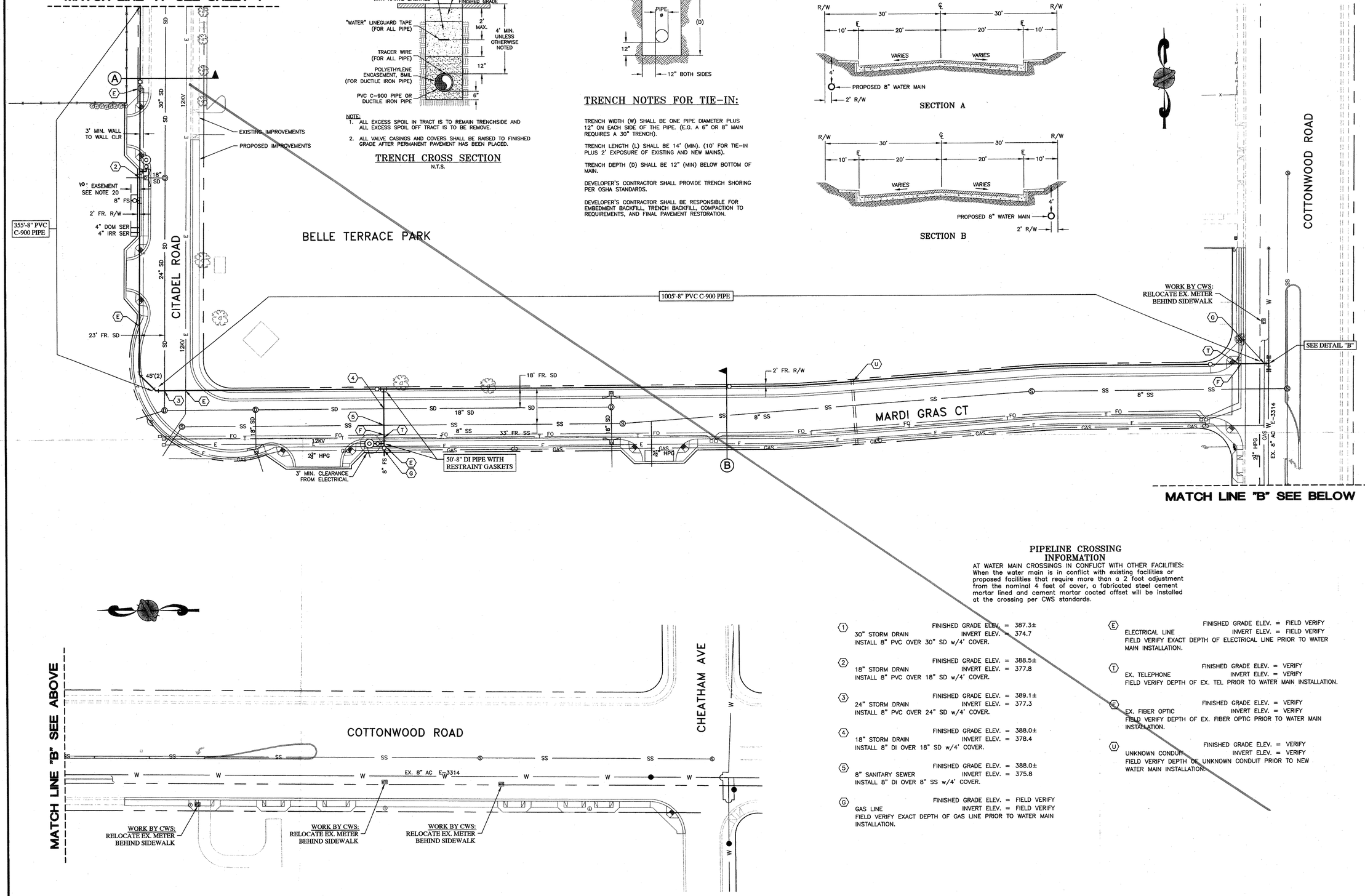
DISTRICT:
BAKERSFIELD

DATE:
3/22/18

PROJECT ID.:
117102

DRAWING NO.:
BAK-11491

SHT 1 OF 2



IMPORT BACKFILL REQUIRED WHEN GOVERNING AGENCY'S COMPACTION REQUIREMENTS CANNOT BE MET WITH NATIVE BACKFILL

PAVEMENT & BASEROCK (WHERE REQUIRED)

FINISHED GRADE

"WATER" LINEGUARD TAPE (FOR ALL PIPE)

TRACER WIRE (FOR ALL PIPE)

POLYETHYLENE ENCASEMENT, 8MIL (FOR DUCTILE IRON PIPE)

PVC C-900 PIPE OR DUCTILE IRON PIPE

2" MAX.

4" MIN. UNLESS OTHERWISE NOTED

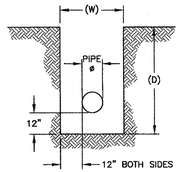
12"

6"

NOTE:
1. ALL EXCESS SPOIL IN TRACT IS TO REMAIN TRENCHSIDE AND ALL EXCESS SPOIL OFF TRACT IS TO BE REMOVE.
2. ALL VALVE CASINGS AND COVERS SHALL BE RAISED TO FINISHED GRADE AFTER PERMANENT PAVEMENT HAS BEEN PLACED.

TRENCH CROSS SECTION

N.T.S.



TRENCH NOTES FOR TIE-IN:

TRENCH WIDTH (W) SHALL BE ONE PIPE DIAMETER PLUS 12" ON EACH SIDE OF THE PIPE. (E.G. A 6" OR 8" MAIN REQUIRES A 30" TRENCH).

TRENCH LENGTH (L) SHALL BE 14' (MIN). (10' FOR TIE-IN PLUS 2' EXPOSURE OF EXISTING AND NEW MAINS).

TRENCH DEPTH (D) SHALL BE 12" (MIN) BELOW BOTTOM OF MAIN.

DEVELOPER'S CONTRACTOR SHALL PROVIDE TRENCH SHORING PER OSHA STANDARDS.

DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE FOR EMBEDMENT BACKFILL, TRENCH BACKFILL, COMPACTION TO REQUIREMENTS, AND FINAL PAVEMENT RESTORATION.

TYPICAL LOCAL STREET SECTIONS

N.T.S.

SECTION A

SECTION B

PIPELINE CROSSING INFORMATION

AT WATER MAIN CROSSINGS IN CONFLICT WITH OTHER FACILITIES: When the water main is in conflict with existing facilities or proposed facilities that require more than a 2 foot adjustment from the nominal 4 feet of cover, a fabricated steel cement mortar lined and cement mortar coated offset will be installed at the crossing per CWS standards.

(1) FINISHED GRADE ELEV. = 387.3±
30" STORM DRAIN INVERT ELEV. = 374.7
INSTALL 8" PVC OVER 30" SD w/4' COVER.

(2) FINISHED GRADE ELEV. = 388.5±
18" STORM DRAIN INVERT ELEV. = 377.8
INSTALL 8" PVC OVER 18" SD w/4' COVER.

(3) FINISHED GRADE ELEV. = 389.1±
24" STORM DRAIN INVERT ELEV. = 377.3
INSTALL 8" PVC OVER 24" SD w/4' COVER.

(4) FINISHED GRADE ELEV. = 388.0±
18" STORM DRAIN INVERT ELEV. = 378.4
INSTALL 8" DI OVER 18" SD w/4' COVER.

(5) FINISHED GRADE ELEV. = 388.0±
8" SANITARY SEWER INVERT ELEV. = 375.8
INSTALL 8" DI OVER 8" SS w/4' COVER.

(G) FINISHED GRADE ELEV. = FIELD VERIFY
GAS LINE INVERT ELEV. = FIELD VERIFY
FIELD VERIFY EXACT DEPTH OF GAS LINE PRIOR TO WATER MAIN INSTALLATION.

(E) FINISHED GRADE ELEV. = FIELD VERIFY
ELECTRICAL LINE INVERT ELEV. = FIELD VERIFY
FIELD VERIFY EXACT DEPTH OF ELECTRICAL LINE PRIOR TO WATER MAIN INSTALLATION.

(T) FINISHED GRADE ELEV. = VERIFY
EX. TELEPHONE INVERT ELEV. = VERIFY
FIELD VERIFY DEPTH OF EX. TEL PRIOR TO WATER MAIN INSTALLATION.

(F) FINISHED GRADE ELEV. = VERIFY
EX. FIBER OPTIC INVERT ELEV. = VERIFY
FIELD VERIFY DEPTH OF EX. FIBER OPTIC PRIOR TO WATER MAIN INSTALLATION.

(U) FINISHED GRADE ELEV. = VERIFY
UNKNOWN CONDUIT INVERT ELEV. = VERIFY
FIELD VERIFY DEPTH OF UNKNOWN CONDUIT PRIOR TO NEW WATER MAIN INSTALLATION.

ENGINEERING

CALIFORNIA WATER SERVICE

DEPARTMENT

REVISIONS:

	DATE:	INIT.
DISTRIBUTION MAP	X	
PLAT SHEET	X	
SYSTEM SCHEMATIC		
STATION SCHEMATIC		

PLAT SHEET NO.:
BAK-36-39

SCALE:
1"=40'

DRAWN BY:
D. STOIA

DESIGNED BY:
J. GONG

CHECKED BY: DATE:
3/22/2018

APPROVED BY: DATE:
3/22/2018

REGISTERED PROFESSIONAL ENGINEER — CRAIG MEIER — No. C60340 — EXP. 06-30-18 — CIVIL — STATE OF CALIFORNIA

TITLE:
BELLE TERRACE SCHOOL SITE BCSD

DISTRICT:
BAKERSFIELD

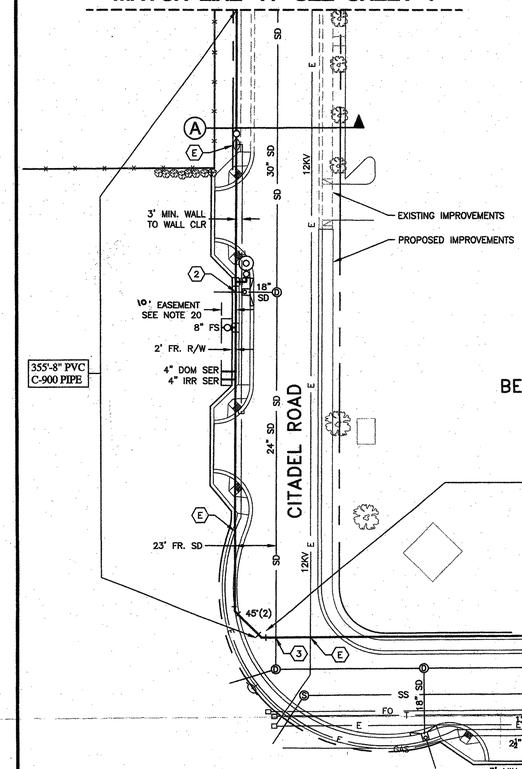
DATE:
3/22/18

PROJECT ID.:
117102

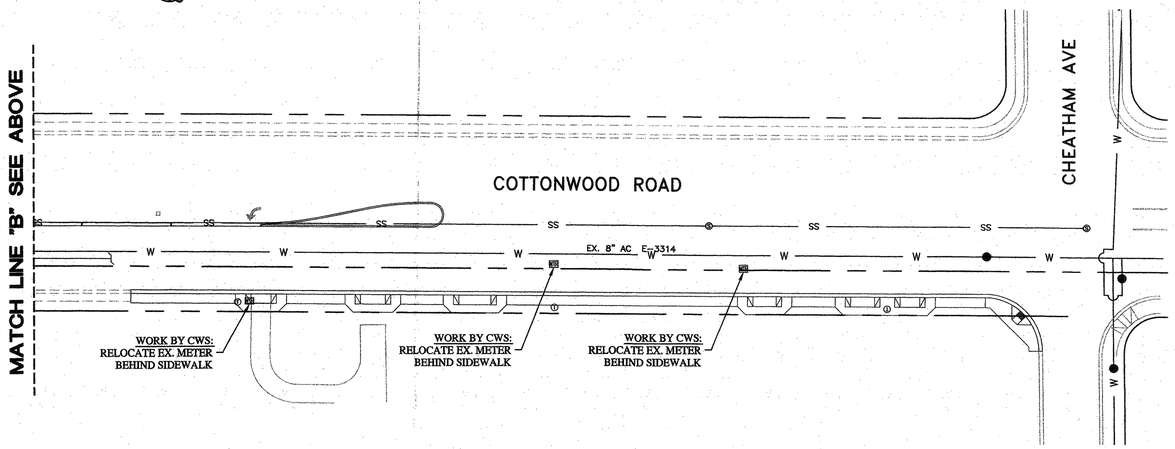
DRAWING NO.:
BAK-11491

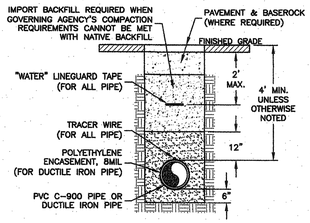
SHT 2 OF 2

MATCH LINE "A" SEE SHEET 1



MATCH LINE "B" SEE BELOW

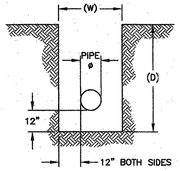




NOTE:
1. ALL EXCESS SPOIL IN TRACT IS TO REMAIN TRENCHSIDE AND ALL EXCESS SPOIL OFF TRACT IS TO BE REMOVE.
2. ALL VALVE CASINGS AND COVERS SHALL BE RAISED TO FINISHED GRADE AFTER PERMANENT PAVEMENT HAS BEEN PLACED.

TRENCH CROSS SECTION

N.T.S.



TRENCH NOTES FOR TIE-IN:

TRENCH WIDTH (W) SHALL BE ONE PIPE DIAMETER PLUS 12" ON EACH SIDE OF THE PIPE. (E.G. A 6" OR 8" MAIN REQUIRES A 30" TRENCH).

TRENCH LENGTH (L) SHALL BE 14' (MIN). (10' FOR TIE-IN PLUS 2' EXPOSURE OF EXISTING AND NEW MAINS).

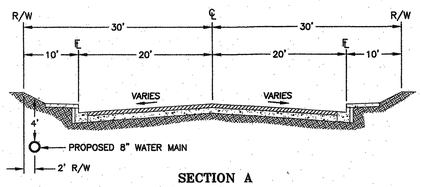
TRENCH DEPTH (D) SHALL BE 12" (MIN) BELOW BOTTOM OF MAIN.

DEVELOPER'S CONTRACTOR SHALL PROVIDE TRENCH SHORING PER OSHA STANDARDS.

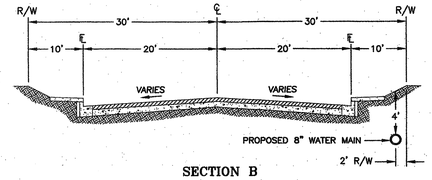
DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE FOR EMBEDMENT BACKFILL, TRENCH BACKFILL, COMPACTION TO REQUIREMENTS, AND FINAL PAVEMENT RESTORATION.

TYPICAL LOCAL STREET SECTIONS

N.T.S.



SECTION A



SECTION B

PIPELINE CROSSING INFORMATION

AT WATER MAIN CROSSINGS IN CONFLICT WITH OTHER FACILITIES: When the water main is in conflict with existing facilities or proposed facilities that require more than a 2 foot adjustment from the nominal 4 feet of cover, a fabricated steel cement mortar lined and cement mortar coated offset will be installed at the crossing per CWS standards.

APPROVED
DIV. OF THE STATE ARCHITECT
LOS ANGELES REGIONAL OFFICE
SS FLS AC
DATE JUL 16 2018

① 30" STORM DRAIN — FINISHED GRADE ELEV. = 387.3± / INVERT ELEV. = 374.7
INSTALL 8" PVC OVER 30" SD w/4' COVER.

② 18" STORM DRAIN — FINISHED GRADE ELEV. = 388.5± / INVERT ELEV. = 377.8
INSTALL 8" PVC OVER 18" SD w/4' COVER.

③ 24" STORM DRAIN — FINISHED GRADE ELEV. = 389.1± / INVERT ELEV. = 377.3
INSTALL 8" PVC OVER 24" SD w/4' COVER.

④ 18" STORM DRAIN — FINISHED GRADE ELEV. = 388.0± / INVERT ELEV. = 378.4
INSTALL 8" DI OVER 18" SD w/4' COVER.

⑤ 8" SANITARY SEWER — FINISHED GRADE ELEV. = 388.0± / INVERT ELEV. = 375.8
INSTALL 8" DI OVER 8" SS w/4' COVER.

Ⓖ GAS LINE — FINISHED GRADE ELEV. = FIELD VERIFY / INVERT ELEV. = FIELD VERIFY
FIELD VERIFY EXACT DEPTH OF GAS LINE PRIOR TO WATER MAIN INSTALLATION.

Ⓔ ELECTRICAL LINE — FINISHED GRADE ELEV. = FIELD VERIFY / INVERT ELEV. = FIELD VERIFY
FIELD VERIFY EXACT DEPTH OF ELECTRICAL LINE PRIOR TO WATER MAIN INSTALLATION.

Ⓣ EX. TELEPHONE — FINISHED GRADE ELEV. = VERIFY / INVERT ELEV. = VERIFY
FIELD VERIFY DEPTH OF EX. TEL PRIOR TO WATER MAIN INSTALLATION.

Ⓕ EX. FIBER OPTIC — FINISHED GRADE ELEV. = VERIFY / INVERT ELEV. = VERIFY
FIELD VERIFY DEPTH OF EX. FIBER OPTIC PRIOR TO WATER MAIN INSTALLATION.

Ⓤ UNKNOWN CONDUIT — FINISHED GRADE ELEV. = VERIFY / INVERT ELEV. = VERIFY
FIELD VERIFY DEPTH OF UNKNOWN CONDUIT PRIOR TO NEW WATER MAIN INSTALLATION.

ENGINEERING

DEPARTMENT

REVISIONS:

	DATE:	INIT.
CONSTRUCTION MAP		X
PLAT SHEET		X
SYSTEM SCHEMATIC		
STATION SCHEMATIC		

PLAT SHEET NO.:
BAK-36-39

SCALE:
1"=40'

DRAWN BY:
D. STOIA

DESIGNED BY:
J. GONG

CHECKED BY: DATE: 3/22/2018

APPROVED BY: DATE: 3/22/2018

REGISTERED PROFESSIONAL ENGINEER — CHING MEI LIN — No. 060340 — EXP. 06-30-18 — CIVIL — STATE OF CALIFORNIA

TITLE:
BELLE TERRACE SCHOOL SITE BCSD

DISTRICT:
BAKERSFIELD

DATE:
3/22/18

PROJECT ID.:
117102

DRAWING NO.:
BAK-11491

SHT 2 OF 2

SPECIFICATIONS FOR MATERIAL

All materials in contact with drinking water shall conform to NSF 61 standards unless specified otherwise.

Ductile Iron (DI) Pipe: All DI pipe shall comply with the latest revision of AWWA Standard C151 and shall be cement mortar lined in conformance with the latest revision of AWWA Standard C104. All DI Pipe shall be Pressure Class 350 for all sizes from 6" to 12" unless specified otherwise and shall be furnished with polyethylene encasement complying with the latest revision of AWWA Standard C105. All DI pipe shall be manufactured by Pacific States, Clow/McWane, U.S. Pipe, Griffin pipe, or American Pipe.

DI Pipe with Push-on Joints: All DI pipe shall have Push-on Joint ends complete with gasket unless specified otherwise on the drawings.

DI Pipe with Restrained Push-on Joints: If specified on the drawings, DI pipe shall be restrained with Field tok 350 gaskets or Sure Stop 350 gaskets for all sizes from 6" to 12". All DI pipe sizes from 16" and larger shall be TR Flex DI pipe by U.S. pipe or Thrust-Lock DI pipe by Pacific States unless specified otherwise on the drawings.

DI Pipe with Flanged Joints: All DI Flanged pipe shall have Class 125 Flanges unless specified otherwise on the drawings. Gaskets for Flanged Joints shall be Flange-Tyte Gaskets by U.S. pipe, or American Torqued Flange Gasket by American Ductile Iron Pipe.

Polyvinyl Chloride (PVC) Pipe: All PVC pipe shall be Class 235, DR 18, unless otherwise specified and shall comply with the latest revision of AWWA Standard C-900 for all sizes from 4" to 12". PVC pipe shall have ductile-iron pipe equivalent outside diameter dimensions. All PVC pipe shall be manufactured by J M Eagle, CertainTeed, Diamond Plastic Corp., Vinyl Tech, Uponor, Royal Pipe or North American Pipe.

PVC Pipe with Push-on Joints: All PVC pipe shall have Push-on Joint ends complete with gasket unless specified otherwise on the drawings.

PVC "Certa-Lok" VIP Restrained Joint Pipe: All PVC "Certa-Lok" VIP Restrained Joint pipe shall be manufactured by CertainTeed. Certa-lok shall comply with the latest revision of AWWA Standard C-900/C-905. Pipe is made to ductile-iron pipe equivalent outside diameter dimensions (DI OD), Class 235, DR 18 in 20' laying lengths, with twin gasket Certa-Lok couplings, nylon splines, and rubber rings.

Fusible PVC Pipe: All Fusible PVC pipe shall be manufactured by Underground Solutions. Fusible PVC Pipe shall comply with the latest revision of AWWA Standard C900/C905. Pipe shall be Class 235, DR 18 unless specified otherwise on the drawings.

Cement Mortar Lined and Cement Mortar Coated Steel Pipe (CL&C): All cement mortar lined and coated steel pipe shall be fabricated from steel cylinder ASA schedule as indicated on the drawing, with ASTM A53 test pressure and ASTM A36 physical properties. Cement mortar protective coating shall be 3/4" for all pipe sizes. The lining shall be 1/2" for 12" and larger pipe and 3/8" for 6" and 8" pipe, and conform to the latest revision of AWWA C205 and NSF/ANSI 61 Standard. Cement Mortar Coating shall be reinforced with 14 gauge wire mesh or spirally wound wire in center of coating. All CL&C steel pipe required for the water main installation shall be as specified on the drawings.

Steel (SH) Pipe: All Steel pipe shall comply with the latest revision of AWWA Standard C200. The size and pressure class for all steel pipe shall be as specified on the drawings.

Polyethylene (PE) Pipe: This section is for PE pipe for sizes 4" and larger and shall only be used when specified on the drawings. All PE pipe shall be high density polyethylene (HDPE) complying with the latest revision of AWWA Standard C906 and PPI PE 3408. PE pipe shall conform to the outside diameter for the ductile-iron sizing system (DI OD) in Table 5 of AWWA C906. For water main where working pressure is less 100 PSI, SDR 17 shall be used. For working pressure between 100 and 160 PSI, SDR 11 shall be used. All PE pipe shall conform to NSF Standard #14 and #61. All PE pipe shall either be blue or have blue printing on it to designate its use as potable water pipeline. HDPE pipe shall be manufactured by CP Chem (Performance Pipe-Driscoplex).

Pipe Fittings: All fittings shall be as specified on the drawings and shall be Ductile iron complying with the latest revision of AWWA Standard C153 for push-on and mechanical joints fittings and C110 for flanged fittings. All fittings shall either be cement mortar lined in conformance with the latest revision of AWWA Standard C104 or coated with fusion-bonded epoxy inside and outside in conformance with the latest revision of AWWA Standard C116. All fittings shall be manufactured by U.S. Pipe, Union/Tyler, Sigma Corp., Star Pipe, or SIP Industries.

Restrained Mechanical Joint (MJ) Adapters and Flanged Adapters: All restrained adapters shall conform to the latest revision of AWWA C111 and C110 for flanged adapters and AWWA C111 and C153 for MJ adapters. All restrained MJ and flanged adapters shall be manufactured by EBAA Iron or Sigma Corp.

Gate Valves: All gate valves shall meet or exceed the latest revision of AWWA Standard C515 for reduced wall, resilient-seated gate valves (or C509 for resilient-seated gate valves) and shall be provided with left hand to open, ductile iron (or cast iron) body with epoxy coating inside and outside complying with the latest revision of AWWA Standard C550, nut operated non-rising stem with square operating nut, two O-ring stem seals above the thrust collar and one below, O-ring gaskets and 304 stainless steel bolts and nuts on bonnet and stuffing box and EPDM rubber encapsulated wedge (when available at no extra cost). All gate valves shall be manufactured by Mueller Company, M & H Valve and Fitting Company, Kennedy Valve Co., Clow Valve Co., American Flow Control, American AVK Co. or U.S. Pipe. Two inch and smaller gate valves shall be Class 125 with standard thread, bronze with wheel, and be manufactured by Milwaukee (No. 105) or Nibco.

Butterfly Valves: All valves greater than 12" nominal size shall be butterfly valves. All butterfly valves shall comply with the latest revision of AWWA Standard C504, and shall be provided with "O-ring" packing, left hand to open, nut operated with 2" square operating nuts, ductile iron body, stainless steel shaft, resilient seat and heavy duty actuator. All butterfly valves shall be manufactured by Mueller Company, M & H Valve & Fitting Company, Pratt Company or Kennedy Valve Co.

Control Valves: All control valves shall be manufactured by Cla-Val Company, Model number, body construction, and flange drilling shall be as specified on the drawings. The drawing may indicate that the control valve will be supplied by California Water Service Company. All valves shall have factory set controls or plate as specified on the drawings. All control or pilot piping shall be copper with bronze fittings. Vaults for control valves shall be as specified on the drawings.

Check Valves: Unless specified otherwise, all check valves shall be swing type with spring and lever and shall comply with the latest revision of AWWA Standard C508. The Valves shall have Class 125 flanged ends unless shown otherwise on the drawings. Check valves shall be manufactured by Mueller Company, Clow Valve Co., M&H Valve & Fitting Company, or Kennedy Valve Co.

Valves for Tapping: All gate valves for tapping purposes shall be Resilient Seat Type valves. The valve for tapping shall be manufactured by Mueller Co., Kennedy Valve Co. or Clow Valve Co.

Tapping Sleeves: All tapping sleeves shall be all stainless steel including flange and shall only be used when specified on the drawings. Tapping sleeves shall be JCM Model 432, Mueller Model H304, Smith Blair 662-663 or Ford style FTSS.

Valve Casings and Covers: All valve casings and covers shall be fabricated as shown on the latest revision of drawing CW-14 as applicable.

2" Ball Valves: Two inch ball valves shall be as shown on the drawing and shall be manufactured by Mueller Co., James Jones Company, Ford Meter Box Company, A.Y. McDonald Mfg Co., or Cambridge Brass.

Blow Off Assemblies: All materials for blow off assemblies shall be as shown on the latest revision of drawing CW-122.

Service Materials: All 1" and 2" service material specifications except copper tubing and plastic PE pipe shall be as shown on the latest revision of drawings CW-555, CW-436 or CW-1020 which includes alternate manufacturers. All service material specifications for services larger than 2" shall be as specified on the plan and/or as specified on the latest revision of the CW drawing for that size service.

Saddles: All saddles shall be as specified on the latest revision of the applicable size service standard drawing: 1" = CW-555 and 2" = CW-436 or CW-1020. Saddles are excluded from the low lead requirement by the Assembly Bill 1953, and thus need not conform to NSF 61 standards.

Solder: All solder shall be lead free.

Copper Tubing: All copper tubing shall conform to the latest revision of ASTM Specification B88 and be Type K soft.

Polyethylene (PE) Service Pipe: All PE plastic pipe for services shall comply with the latest revision of ASTM D2239 with a Standard Code Designation of PE 4710. Dimensions and tolerance of pipe shall be as specified in Table 3 of the latest revision of AWWA Standard C901 for PC 200 SIDR7. This is a high density polyethylene plastic pipe conforming to the inside-diameter dimensions of iron pipe sizes and having a 200 p.s.i. pressure rating.

Meter Boxes: All meter boxes for 1" services and 2" services shall be as specified on the latest revision of drawings CW-555, CW-436, or CW-1020. All meter boxes for services larger than 2" shall be as specified on the plans and/or as specified on the latest revision of the CW drawing for that size service. All meter boxes for 1" services and 2" services shall be supported by placing bricks or 2"X 4" pressure treated lumber under two sides of the base of the meter box.

Vaults: Vaults for appurtenances other than meters (such as Check Valves or Control Valves) shall be as specified on the drawings.

Machine Bolts: All steel bolts and nuts used for flanged fittings, flexible couplings, or other bolted appurtenances shall be 304 stainless steel. Ductile iron bolts are acceptable when the appurtenance is made of ductile iron and comes with option of ductile iron bolts, such as mechanical joint fittings. Anti-gal lubricant shall be used with stainless steel bolts & nuts.

PVC High Deflection Couplings: All PVC high deflection couplings shall conform to the latest revision of AWWA C-900 and shall be manufactured by CertainTeed.

PVC Closure Couplings: All PVC closure couplings shall conform to the latest revision of AWWA C-900 and shall be manufactured by CertainTeed.

Transition/Flexible Couplings: All Transition/Flexible Coupling shall comply with the latest revision of AWWA Standard C219 and shall be furnished with gaskets. The Company may require flexible couplings to be epoxy coated if soil conditions are determined to be corrosive. If the flexible coupling is steel, sleeve must be a minimum of 10 inches long. If the Flexible coupling is ductile iron then a standard sleeve length may be used unless the drawing specifies otherwise. Flexible Couplings shall be manufactured by Smith-Blair, Inc. If the Ford Meter Box Company, or Romac Industries, Inc. Extended Range Coupling by Romac Industries, Inc. or Quantum Wide Range Coupling by Smith Blair can be used to accommodate a wider range of outer diameter for the same nominal size pipes.

Solid Sleeves: All solid sleeves shall be made of ductile iron and shall be manufactured by Tyler Pipe or Tyler Union Foundry.

Tracer Wire: Tracer wire shall be minimum #12 AWG solid copper wire with 45 mils of high molecular weight polyethylene (HMWPE) insulation, UL Listed, rated for direct burial, color blue and installed with all pipe including PVC, polyethylene and ductile iron pipe. For installation details see the latest revision of drawing CW-850.

Fire Hydrants: All fire hydrants shall be as specified on the district speacific drawing or as approved by CWS Co. district personnel. For typical Fire Hydrant details see the latest revision of drawing CW-380.

Fire Hydrant Buryo: All fire hydrant buryo shall be manufactured from Ductile iron to ASTM A536 Standards and have a minimum working pressure rating of 200 PSI. Buryo shall be manufactured by Clow Valve Co., SBF, Inc., Sigma, or Star Pipe.

SPECIFICATIONS FOR INSTALLATION OF DUCTILE IRON AND POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND APPURTENANCES

Permits: All specification sheets, city/county or other environmental permits necessary for the installation of facilities must be obtained by the company and be on the job site prior to and during construction.

Compliance with all the Rules and Regulations of the California Occupational Safety and Health Act (CAL OSHA), Public Utilities Commission, "William Steiger Occupational Safety and Health Act of 1970", is required on this project. The work practices for all pipe shall be in accordance with the latest revision of the American Water Works Association Publication C-206 Standard for Field Welding of Steel Water Pipe, C-600 Standard for Installation of Ductile Iron Mains and their Appurtenances, C-602 Standard for Cement-Mortar Lining of Water Pipelines in Place, C-604 Standard for Installation of Steel Water Pipe, C-605 Standard for underground installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water, M23 Manual of Water Supply Practices for PVC Pipe-Design and installation and M55 Manual of Water Supply Practices for PE Pipe - Design and Installation. "Fusible PVC Pipe" shall be installed per manufacturer's recommendations.

Please note direct discharge of highly chlorinated water to the environment is expressly prohibited. Refer to "Specifications for Dechlorination of Flushed Water" for more information. The Developer's Contractor shall comply with environmental laws and regulations as set forth by all federal, state and local agencies.

Materials: All materials installed for the facilities to be constructed by the Developer's Contractor must comply with the drawings and "Specifications for Material". No materials are to be supplied or furnished by California Water Service Company unless specifically indicated on the plans for special installations. All materials must be on the job site and inspected prior to start of construction. Any pipe, valve, or appurtenance whether installed or not, which in the opinion of the Company, does not meet the requirements of these specifications or otherwise found unfit, shall be rejected as being unfit, and shall be immediately removed from the job site.

Line and Grade: The horizontal and vertical alignment for installation of the pipe shall be established in the field by the Developer's Contractor in accordance with the plans and specifications. Location of water facilities including finished grades and elevations shall be staked with offsets on site by the Developer's Project Engineer prior to start of construction. Grades and elevations of installed facilities, such as valves, hydrants etc. shall be signed off by the California Water Service Company representative prior to acceptance of facilities.

Cover: Under normal conditions all mains shall be covered to a depth of four feet below the finished grade over the pipeline, unless specified otherwise on the plans. Prior approval must be obtained from California Water Service Company to install mains with greater or less than four feet of cover.

Separation between Water Mains and Non-potable pipelines or other Facilities: Water mains shall be at least 10 feet horizontally from and one foot vertically above, any parallel pipeline conveying sewage (untreated, primary, or secondary), disinfected secondary recycled water, and hazardous fluids, unless specified otherwise on the plans. Water mains shall be installed at least 4 feet horizontally from, and one foot vertically above, any parallel pipeline conveying tertiary recycled water or storm drainage. At crossings, water main shall be contructed no less than 45-degrees to and at least one foot above any pipeline indicated above. No connection joints shall be made in the water main within eight horizontal feet of the fluid pipeline. Water main shall not be installed within 100 horizontal feet of any sanitary landfill, wastewater disposal pond, or hazardous waste disposal site, or within 25 horizontal feet of the nearest edge of any cesspool, septic tank, sewage leach field, seepage pit, underground hazardous material storage tank, or groundwater recharge project. The State of California Department of Public Health Title 22 Article 4 Section 64572 "Water Main Separation" shall be followed when installations cannot meet the "Basic Separation Standards". A minimum vertical clearance of twelve (12) inches shall be maintained between the water main and all foreign structures, and a minimum horizontal clearance of five (5) feet shall be maintained between water mains and other utilities not mentioned above unless otherwise indicated on the plans approved by the Company. Refer to "Pipeline Crossing Information" shown on the plans for information of water main separation requirements for existing facilities. The Company approval must be obtained prior to making any changes from the plans. This includes changing grade or alignment to avoid structures, other pipes, manholes, or any other fixed objects which may be encountered during installation. At pipe crossings, deviations in cover over the pipeline may require the installation of a fabricated cement mortar lined and coated steel pipe.

Workmanship: The pipe shall be installed to a true line and grade except on curves where ductile iron pipe may be installed with joint deflections between adjacent lengths of pipe not to exceed 3 degrees for ductile iron pipe sizes 6", 8", and 12". PVC pipe shall not be deflected at joints for horizontal or vertical deflection. No joint deflection shall be allowed in joints between fittings and pipe. "Certainteed" PVC Deflection Couplings shall be used with PVC C-900 between adjacent lengths of pipe to attain up to 5 degrees deflection at the joint when required.

When assembling a PVC pipe to an iron fitting, valve, or appurtenance (push-on), remove all but 1/4 inch of the factory made bevel from the spigot end of the pipe. Bottom the pipe in the bell of the iron fitting.

Field-cut lengths of PVC and DI pipe may be used for making connections to valves, fittings, appurtenances, and closures where necessary. The cutting and beveling of the pipe for inserting into the bell shall be done by the use of a square cutting tool. Pipe cutting tool shall be Company approved and manufactured for this purpose, without damage to the pipe. The bevel of the pipe shall be the same as required for the fitting.

Trench Bottom: The bottom of the trench shall be smooth and free from pieces of rock or other material that would tend to scratch, puncture or break the pipe or damage the polyethylene encasement used on ductile iron pipe. If rocks or stones are encountered, they shall be removed to a depth of six inches below bottom of pipe and replaced with material tamped to grade. A six inch layer of sand shall be placed in the trench bottom to provide a firm, stable, and uniform support for the full length of the pipe, except at the joints where bell holes shall be excavated below the bottom of the pipe so that the pipe will be supported by the joint. Under no circumstances shall the bell hole undermine the support for the fittings or valves.

Valves and other various fittings may be required to be supported by a concrete cradle if it is determined by the Company that the bedding in the trench bottom can not be properly compacted to provide adequate support.

When an unstable subgrade condition is encountered that could provide inadequate pipe support, the Company shall require additional trench depth to be excavated, refilled and compacted with suitable foundation material.

No water main or appurtenance shall be laid in water, or when, in the opinion of the Company, the trench conditions or the weather are unsuitable for construction. Any water main which has been submerged shall be removed from the trench and be relaid. The trench shall be dewatered when running or standing water occurs in the trench bottom and the removal shall continue until the pipe has been installed and the backfill has been placed to a sufficient height to prevent the pipe from being submerged in water.

IMPORTANT: All trench excavations shall be in accordance with the Rules and Regulations of the California Occupational Safety and Health Act (CAL OSHA). This includes all necessary shoring determined by either the depth of trench and/or soil conditions.

Pipe and Appurtenances Handling: All water main and appurtenances shall be carefully lowered into the trench by means of padded slings, hooks, pipe tongs, or other suitable equipment consistent with safety, in such a manner to prevent damage to the pipe coating or cement mortar or appurtenance surfaces. Under no circumstances shall any material be dropped or dumped into the trench. Any foreign material inside the pipe shall be removed and the interior of the pipe kept clean during installation. All water main and appurtenance with damaged exterior or interior surfaces shall not be installed.

During installation the open ends of the pipe shall be covered at night or when no work is in progress at that point to prevent entrance of trench water, animals, or other foreign matter.

On all pipe, a continuous strip of tracer wire (per material specification) shall be taped to the top exterior surface of the pipe per the latest revision of drawing CW-850. Tracer wire splices using appropriate connectors are required at all locations where the wire is cut.

A polyethylene encasement shall be installed over ductile iron pipe, fittings, and appurtenances per latest revision of AWWA Standard C105 Polyethylene Encasement for Ductile Iron Piping and the plans and specifications, or as requested and directed by the authorized Company representatives.

Note: Ductile iron fittings and appurtenances installed on PVC C-900 main shall require polyethylene encasement with a 2 feet overlap onto the PVC main. This overlap shall be secured to main per the latest revision of AWWA Standard C105.

Rubber Ring Joints for PVC C-900 and Ductile Iron Pipe: Push-on type rubber ring joints with rubber rings for integral bell ends shall be joined as follows: The ring groove, bell socket and plain end should be wiped clean. Insert the gasket making sure that it faces the proper direction and that it is correctly seated. The plain end shall be beveled and free of any sharp or ragged edges which may damage or dislodge the gasket. Lubricate the entire outside end of the pipe including the pipe bevel, also lubricate the exposed portion of the rubber ring gasket in the bell (See "pipe joint lubricant" below). Push the plain end into the bell by hand or with the use of a bar and block until it is appropriately seated per pipe manufacturer's recommendations, keeping the joint straight while pushing. Construction machinery shall not be used to push the pipe into a pipe bell end or a fitting bell end. After assembly, the resulting position of the rubber ring shall be checked with a feeler gauge.

If "Field Lok" or "Sure-Stop" gaskets are specified on the plans, the gasket shall be installed in accordance with the manufacturer's recommendations.

If "TR FLEX" or "Thrust-Lok" restrained joint system is specified on the plans, the joint assembly shall be installed in accordance with the manufacturer's recommendations.

If PVC "Certa-Lok" VIP Restrained Joint Pipe is specified on the plans, the joint assembly shall be installed in accordance with the manufacturer's recommendations.

Pipe Joint Lubricant: Pipe joint lubricant shall be as specified by the pipe manufacturer and shall be NSF approved for use in potable water systems.

Mechanical Joints: Mechanical joints shall be joined as follows: The socket and plain end should be wiped clean and any excess coating in the bell should be removed. The plain end, bell socket, and gasket should be washed with a soap solution or lubricant furnished with the gaskets to improve the seating of the gasket in the socket and to help the various parts slide together along the pipe. Place the gland on the plain end with the lip extension toward the plain end of the pipe, followed by the gasket with the narrow edge of the gasket toward the end of the pipe. Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during the assembly. Push the gland toward the socket and center it around the pipe with the gland lip against the gasket. Insert bolts and hand tighten nuts. Partially tighten the bottom bolt first; then the top bolt; next the bolts at either side, and finally the remaining bolts. Repeat this process until all bolts are torqued to a value between 75 and 90 ft-lbs.

If restrained mechanical joint adapters are specified on the plans, the adapter assembly shall be installed in accordance with the manufacturer's recommendations.

Underground Protection: All flexible couplings, bare steel, MJ x MJ sleeves, and all bolts (including stainless steel) shall be protected as follows.

The entire area of the fitting should be dry and free of dust, dirt or other foreign matter. Rust or other foreign material should be removed by scraping or wire brushing. Wiping with dry rags or waste may be necessary to remove particles from brush cleaning. For all of grease must be removed using a low residue volatile petroleum solvent before application of grease and wrapping.

The exposed area should be coated with a heavy coating of Metalguard #301 grease by the glove method to a thickness of at least ¼".

The entire grease area should be firmly wrapped with at least two layers, half lapped, of a loose weave, polyethylene film (8 mils thick, 4" wide). Metalguard #301 grease is also a minimum of ¼" thickness should be applied between each layer during wrapping. working the grease into mesh openings.

The entire mesh wrapped area of the fitting should be covered with a third and final coating of at least ¼" thick of Metalguard #301 grease by the glove method.

Two layers of polywrap, half lapped, should be firmly applied over all areas of the coated and wrapped fittings. Backfilling may follow immediately after this wrapping.

Thrust Blocks: Concrete thrust blocks shall be provided for all fittings to prevent movement when the main is under pressure. This includes tees, ells, reducers, caps and plugs. Forms are required and are to be provided by the Developer's Contractor. These forms shall be smooth, mortar tight and of sufficient strength to maintain shape during the placing of the concrete. All concrete thrust blocks shall be constructed per the latest revision of drawing CW-435 or as specified in the drawings.

Embedment Backfill: The embedment backfill is 6 inches of sand bedding below the pipe and 12 inches of sand backfill above the pipe (see trench section definition below). Care must be taken to compact the sand backfill material solidly around and under the pipe. Small tampers and vibrators are allowed for compacting near the pipe and over the pipe after a minimum of 6 inches of sand backfill above the pipe has been placed. Care must be taken that equipment employed for compaction in the first lift although great care must be taken to prevent damage or flotation of the pipeline by saturation. Erosion of support at the pipe sides and bottom by water jetting must be prevented. Rocks or hard lumps are not permitted in the embedment backfill or final backfill.

Sand is defined as material free from organic matter and clay with a sieve grading by weight as follows:

Sieve Size	% Passing Sieve
No. 4	100
No. 200	0-5

Final Backfill: In areas where required, the permanent pavement and temporary pavement replacement must comply with specifications of the local governing authorities. All backfill above the sand embedment backfill must meet compaction requirements of the local governing agency. All pavement broken shall be replaced in strict accordance with the requirements of the local authorities, or lacking local requirements, in accordance with the latest revision of drawing CW-236.

Other Facilities: All existing facilities, such as but not limited to sewers, storm, gas mains, water mains, telephone conduits, and power or telephone poles which may be located close to trench operations must be protected by the Developer's Contractor. If any of these facilities are damaged by the Developer's Contractor, repairs shall be made to the satisfaction of the interested parties at the Developer's Contractor's expense.

Valve Casings and Covers: A valve casing with cover shall be installed for each gate valve, butterfly valve, blow off assembly or when specified on the plans per the latest revision of drawing CW-439. The valve cover and frame for valves in paved and unpaved areas shall be per the latest revision of drawing CW-14. The valve cover frame shall be set in a ring of concrete a minimum of 24" in diameter and three inches thick or per local governing agency's standards whichever is greater. All valve casing covers must be placed flush with the finished grade of the surrounding area.

Blow Off Assemblies: A blow off assembly as shown on the latest revision of drawing CW-122 shall be installed for each dead end capped main. The assembly is to include a valve casing and cover.

Services and Meter Boxes: Services and meter boxes shall be installed as shown on the latest revision of drawings CW-555 for 1" services, CW-436 or CW-1020 for 2" services and for sizes larger than 2" services as designated on the plans and/or the latest revision of the CW drawing for that size service. The 1" and 2" service pipe shall be installed at a depth of 30" or more from finished grade over the service pipe unit in the event shall the depth be less than 18". The Developer's Contractor must get prior approval from the Company to install service pipe with less than 30" of cover.

All meter box locations must be approved by the Company and the boxes must be installed flush with finished grade in the landscaping area of the meter. The meter boxes for 1" and 2" services shall be supported by placing 2"x4" treated lumber or bricks on two sides of the meter box's base. Avoid postal and street pedestals, driveways, trees/bushes, fencing, sewer lines, and other utilities.

Saddles and saddle tapping are required for all service connections made on PVC pipe. When making this type of connection, proper equipment must be used which attaches to the corporation stop permitting the cutting tool to be fed through the corporation stop to cut a hole in the pipe. It is important that the cutting tool be a sharp shell type (hole) cutter which will retain the coupon and be designed to accommodate walls as heavy as DR 14. The shell cutter shall be lubricated on the outside only and not on the inside of the cutter with a recommended lubricant. Do not drill a hole in PVC pipe with a twist drill or auger bit.

Direct tapping machines for service connections on ductile iron pipe must be approved by California Water Service prior to direct tapping ductile iron mains. Plastic PE pipe is to be cold flared to match recessed fittings or is to have outside end beveled for Insteitte fittings. Forming tool for beveled end shall be Mueller's beveling tool number H10817 or approved equal.

Connection to Existing System: Only the Company is allowed to make the connection to the existing system. The Developer's Contractor shall furnish to the Company the necessary fittings, valves, pipe, and joint material required to connect the new mains to the existing system. The Developer's Contractor must adjust the new mains to the nominal line and grade of existing facilities. The Developer's Contractor to complete piping and maintain the specified clearance from existing main as shown on the drawings. The Developer's Contractor shall make the excavation for the tie-in. The trench shall be left in a safe condition for the Company to complete the connections. If the trench is considered unsafe for workers, the Company may require the Developer's Contractor to return and adequately excavate for the tie-ins at the Contractor's expense. After the Company has completed the connection, the Developer's Contractor shall install concrete thrust blocks, install valve casings and covers, and backfill the excavation. The Developer's Contractor shall then replace any pavement that was cut for the excavation.

Pressure Test: Prior to any testing, at least seven days should elapse after the last concrete thrust block was poured if Type I portland cement was used and three days if high-early strength (Type III portland cement) was used. Care must be taken to assure that the pressure test shall be made by filling the mains with water and allowing them to stand under regular system pressure for a period of at least twenty-four hours. After completion of the preliminary test, the Developer's Contractor shall conduct a hydrostatic test by raising the pressure in the main to 50 pounds per square inch above the normal static pressure at the point of observation with a minimum test pressure of 150 pounds per square inch. A calibrated pressure chart recorder and a water meter shall be provided by California Water Service Company. The hydrostatic test shall not be conducted without a Company representative present. The pressure that the test is applied shall be maintained for a minimum of four hours. The test shall start and finish at the same pressure. If there is a pressure drop, the Developer's Contractor shall pump more water into the main through the water meter to bring the main back to the starting pressure. The leakage is the calculated volume of water pumped into the main through the meter. The leakage shall be measured accurately during the test period to determine that the leakage rate does not exceed the values shown in Table IA for ductile iron pipe and Table IB for PVC C-900 pipe. There shall be no leakage, zero gallons per four hours test period at test pressure for the portion of pipeline that is steel pipe CL&C with welded joints, HDPE pipe with fused joints, and fusible PVC pipe. An air test may be used as an alternate method on the steel pipe CL&C welded sections. Test pressure to be held for a four-hour duration, with no volumetric loss during test period. A calibrated pressure chart recorder will be provided by California Water Service Company. The necessary taps, connecting pipe, and valve fittings shall be provided by the Developer's Contractor. Any leaks or failures that develop during the test shall be repaired by the Developer's Contractor immediately.

If the mains fail to meet requirements of the hydrostatic test, the Developer's Contractor shall, at his expense, make repairs to reduce the leakage. The repair work shall be continued until a satisfactory test is made.

Disinfection of Mains: All mains that are installed by the Developer's Contractor shall be disinfected by the Developer's Contractor in accordance with the "Specifications for Disinfection of New Mains."

Inspection: The Company reserves the right of access to the work at all times for the purpose of inspecting and the Developer's Contractor shall permit the Company's representative to make an inspection at any time. The Developer's Contractor shall notify the Company's local manager at least 48 hours prior to any work being started at the project site. The Company will normally provide no more than 2 inspections per day during normal working hours. The trench must be left open until the Company has inspected the new installation and approved that portion of trench to be covered. If the trench is covered prior to the Company's inspection, the Developer's Contractor will be required to uncover the trench at the Developer's expense.

Protection: The Developer's Contractor shall at all times provide suitable and adequate danger signals and barricades. If necessary, the Developer's Contractor shall also provide temporary bridges across the trench to permit free ingress and egress to and from private driveways or traveled roads during work. No street shall be closed unless a permit has been obtained from the appropriate authority.

Specifications and Drawings: Specifications and drawings shall be taken together and anything shown on the drawings and not covered by the specifications or covered by the specifications and not shown on the drawings shall be considered as though it were covered by both specifications and drawings. Any points of disagreement should be referred to the Company's representative as soon as possible to resolve any possible misunderstandings.

Clean Up: Upon completion of the work, the Developer's Contractor shall remove all rubbish and waste material resulting from the Contractor's operations and leave the ground along the route of the pipeline in a neat and clean condition. The Developer's Contractor shall be responsible for removal of all excess spoil from the trench excavations, the Company shall not accept any responsibility.

Guarantee of Workmanship: Notwithstanding Owner's acceptance of the new facilities, the Developer's Contractor shall guarantee all of his workmanship for a period of one calendar year from and after acceptance of the work by the Owner. The Developer shall be responsible for having the Contractor repair and make good any defects or imperfections in the work at his sole cost and expense. If deficiencies develop during the Guarantee calendar year, such as but not limited to: leaks in the pipeline or appurtenances, settlement of trenches, or deteriorating pavement due to faulty or imperfect workmanship, the owner retains the right of making repairs and the Developer is responsible for the cost of said repairs.

TABLE IA
ALLOWABLE LEAKAGE PER 1000 FT. OF DUCTILE IRON PIPELINE

Average Test Pressure	Nominal Pipe Diameter — Inches							
	6	8	10	12	14	16	18	24
(PSI)	GALLONS PER HOUR (GPH)*							
200	0.57	0.76	0.96	1.15	1.34	1.53	1.72	2.29
175	0.54	0.72	0.89	1.07	1.25	1.43	1.61	2.15
150	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.99

*If the pipeline under test contains sections for various diameters, the allowable leakage will be the sum of the computed leakage for each size. For example, Allowable Leak for 500' of 8" PVC under test pressure = 500'/1000' x 0.66 GPH x 4 Hour = 1.32 Gallons

TABLE IB
ALLOWABLE LEAKAGE PER 1000 FT. OF PVC C-900 PIPELINE

Average Test Pressure	Nominal Pipe Diameter — Inches			
	6	8	10	12
(PSI)	GALLONS PER HOUR (GPH)*			
200	.57	0.76	0.96	1.15
150	.50	0.66	.86	.99

*If the pipeline under test contains sections for various diameters, the allowable leakage will be the sum of the computed leakage for each size. For example, Allowable Leak for 500' of 8" PVC under test pressure = 500'/1000' x 0.66 GPH x 4 Hour = 1.32 Gallons

SPECIFICATIONS FOR DISINFECTION OF NEW MAINS BASED ON THE PROCEDURES OUTLINED IN THE ANSI/AWWA C651-05

GENERAL INSTRUCTIONS

1. Precautions shall be taken to prevent soiling of pipe, fittings, valves and other materials. Pipe and fittings shall be stored so as not to accumulate mud or water, and all other materials shall be stored in a clean, dry location. Valves shall be stored in a manner to prevent rubber gaskets and pipe ends clean, dry, and out of the sun to avoid degradation of materials.

2. All pipe shall be free of foreign materials and debris before lowering the pipe into the trench.

3. When the main is left unattended for any length of time, the ends shall be plugged or completely wrapped to prevent the entrance of foreign material or small animals.

4. Loading of new mains: A reduced pressure principle (RP) backflow prevention assembly (USC approved and lead-free compliant) is required to be installed in line with the domestic supply on all new main installations to prevent any heavily chlorinated and/or potentially contaminated water from entering the distribution system. RP must be sized appropriately to factor pressure loss through the assembly while still meeting adequate flushing velocity requirements.

The Developer's Contractor is responsible for providing a backflow prevention assembly that has been tested and passed within the previous twelve months. The acceptable test report must be provided to the Cal Water Inspector at least one week prior to the start of work and will document the make and model number, serial number, and most recent test date on the New Main Disinfection Report in non-erasable ink or pen writing.

5. Apply the NSF-grade or equivalent hypochlorite solution or H.T.H. tablets/granules, using one of the methods described under "Chlorine Application Methods." A Cal Water Inspector is to approve the chlorine concentration to ensure that a minimum 50 ppm concentration has been applied (not to exceed 200 ppm). The initial reading must be documented on the New Main Disinfection Report in non-erasable ink or pen writing. Samples with a high chlorine concentration must be analyzed with a high range total chlorine test kit. Hoch Model Number CN-21P or equivalent may be used for the initial dosage test. The chlorine test kit must use non-expired reagents and shall be verified on a periodic basis prior to field use.

6. Obtain the temperature reading at the time of loading, and document on the New Main Disinfection Report in non-erasable ink or pen writing. Allow heavily chlorinated water to stand therein for a contact period of at least twenty-four hours. If the water temperature is less than 41°F, the water shall remain in the pipe for at least 48 hours. A California Water Service Company inspector is to measure the chlorine residual after the appropriate contact period.

When using the tablet chlorine method, there must be a detectable free chlorine residual at the end of the required hold time.

When using hypochlorite solution method, the free chlorine residual must be at least 10 ppm at the end of the required hold time. If the chlorine concentration has dropped to less than 10 ppm, then the mains must be thoroughly flushed and re-loaded, superchlorinated by the continuous or batch method (see below) until required contact period shall be reached due to the chlorine demand. Equipment used to superchlorinate by the continuous feed method will be provided by the Developer's Contractor.

7. The Cal Water Inspector must measure or obtain upstream distribution system chlorine residual, which will be used for comparison after flushing. The main must be flushed thoroughly at all available blow offs and hydrants. (See Specifications for Dechlorination of Flushed Water). After flushing, the chlorine residual coming out of the new main must match the chlorine residual of the distribution system, indicating that adequate flushing has been performed. The Developer's Contractor should re-install the caps/plugs back on the blow off assembly to prevent debris from entering the blow off after flushing. The Cal Water Inspector must document the final chlorine residual on the New Main Disinfection Report in non-erasable ink or pen writing.

8. The Company's representative will collect two bacteriological sample sets at a minimum of 18, to 30 hours apart and have them analyzed for Total coliform, E.coli, and heterotrophic plate count (HPC).

The samples should be taken from a combination blow off illustrated in the latest revision of drawing CW-638, sampling device illustrated in the latest revision of drawing CW-914 or a service located near the end of the chlorinated section. All sample taps must be evaluated for the potential for contamination, cross-connections, or other factors that may result in non-representative sampling. The hose bib sampling device is recommended for any sample collected from a service hose bib.

In accordance with the latest revision of AWWA standard C651, samples shall be collected every 1,200 ft., from the end of the line, and from each branch or dead-end.

All Total coliform, E.coli, and HPC results must be documented on the New Main Disinfection Report in non-erasable ink or pen writing. A copy of the laboratory results must also be attached to the New Main Disinfection Report.

9. If the bacteriological tests are positive, or if the HPC results are greater than 500 CFU/ml, further flushing and confirmation samples will be necessary. Any positive follow-up sample tests or HPC>500 CFU/ml requires the Developer's Contractor to thoroughly flush, re-load, and superchlorinate the new main by the continuous feed method. Repeat Steps 7–8. All sample results (original and non-confirming) must be documented in the appropriate location on the New Main Disinfection Report in non-erasable ink or pen writing. The Water Quality department must be notified if the bacteriological and HPC results continue to show positive results.

10. The Cal Water Inspector and Supervisor will complete, sign, and submit the New Main Disinfection Report to the Water Quality Program Manager (WQPM) for review and approval. Approval will be based on two consecutive sets of sample results that are absent of total coliform, E.coli, HPC less than 500 CFU/ml, and a final chlorine residual that is representative of background residual in the distribution system

SPECIFICATIONS FOR MATERIAL

All materials in contact with drinking water shall conform to NSF 61 standards unless specified otherwise.

Ductile Iron (DI) Pipe: All DI pipe shall comply with the latest revision of AWWA Standard C151 and shall be cement mortar lined in conformance with the latest revision of AWWA Standard C104. All DI Pipe shall be Pressure Class 350 for all sizes from 6" to 12" unless specified otherwise and shall be furnished with polyethylene encasement complying with the latest revision of AWWA Standard C105. All DI pipe shall be manufactured by Pacific States, Clow/McWane, U.S. Pipe, Griffin pipe, or American Pipe.

DI Pipe with Push-on Joints: All DI pipe shall have Push-on Joint ends complete with gasket unless specified otherwise on the drawings.

DI Pipe with Restrained Push-on Joints: If specified on the drawings, DI pipe shall be restrained with Field lok 350 gaskets or Sure Stop 350 gaskets for all sizes from 6" to 12". All DI pipe sizes from 16" and larger shall be TR Flex DI pipe by U.S. pipe or Thrust-Lock DI pipe by Pacific States unless specified otherwise on the drawings.

DI Pipe with Flanged Joints: All DI Flanged pipe shall have Class 125 Flanges unless specified otherwise on the drawings. Gaskets for Flanged Joints shall be Flange-Tyte Gaskets by U.S. pipe, or American Torueseal Flange Gasket by American Ductile Iron Pipe.,

Polyvinyl Chloride (PVC) Pipe: All PVC pipe shall be Class 235, DR 18, unless otherwise specified and shall comply with the latest revision of AWWA Standard C-900 for all sizes from 4" to 12". PVC pipe shall have ductile-iron pipe equivalent outside diameter dimensions. All PVC pipe shall be manufactured by J M Eagle, CertainTeed, Diamond Plastic Corp., Vinyl Tech, Uponor, Royal Pipe or North American Pipe.

PVC Pipe with Push-on Joints: All PVC pipe shall have Push-on Joint ends complete with gasket unless specified otherwise on the drawings.

PVC "Certa-Lok" VIP Restrained Joint Pipe: All PVC "Certa-Lok" VIP Restrained Joint pipe shall be manufactured by CertainTeed. Certa-lok shall comply with the latest revision of AWWA Standard C-900/C-905. Pipe is made to ductile-iron pipe equivalent outside diameter dimensions (DI OD), Class 235, DR 18 in 20' laying lengths, with twin gasket Certa-Lok couplings, nylon splines, and rubber rings.

Fusible PVC Pipe: All Fusible PVC pipe shall be manufactured by Underground Solutions. Fusible PVC Pipe shall comply with the latest revision of AWWA Standard C900/C905. Pipe shall be Class 235, DR 18 unless specified otherwise on the drawings.

Cement Mortar Lined and Cement Mortar Coated Steel Pipe (CL&C): All cement mortar lined and coated steel pipe shall be fabricated from steel cylinder ASA schedule as indicated on the drawing, with ASTM A53 test pressure and ASTM A36 physical properties. Cement mortar protective coating shall be 3/4" for all pipe sizes. The lining shall be 1/2" for 12" and larger pipe and 3/8" for 4" and 8" pipe, and conform to the latest revision of AWWA C205 and NSF/ANSI 61 Standard. Cement Mortar Coating shall be reinforced with 14 gauge wire mesh or spirally wound wire in center of coating. All CL&C steel pipe required for the water main installation shall be as specified on the drawings.

Steel (SU) Pipe: All Steel pipe shall comply with the latest revision of AWWA Standard C200. The size and pressure class for all steel pipe shall be as specified on the drawings.

Polyethylene (PE) Pipe: This section is for PE pipe for sizes 4" and larger and shall only be used when specified on the drawings. All PE pipe shall be high density polyethylene (HDPE) complying with the latest revision of AWWA Standard C906 and PPI PE 3408. PE pipe shall conform to the outside diameter for the ductile-iron sizing system (DI OD) in Table 5 of AWWA C906. For water main where working pressure is less than 100 PSI, SDR 17 shall be used. For working pressure between 100 and 160 PSI, SDR 11 shall be used. All PE pipe shall conform to NSF Standard #14 and #61. All PE pipe shall either be blue or have blue printing on it to designate its use as a potable water pipeline. HDPE pipe shall be manufactured by CP (Performance Pipe-Driscopipe).

Pipe Fittings: All fittings shall be as specified on the drawings and shall be Ductile Iron complying with the latest revision of AWWA Standard C153 for push-on and mechanical joints fittings and C110 for flanged fittings. All fittings shall either be cement mortar lined in conformance with the latest revision of AWWA Standard C104 or coated with fusion-bonded epoxy inside and outside in conformance with the latest revision of AWWA Standard C116. All fittings shall be manufactured by U.S. Pipe, Union/Tyler, Sigma Corp., Star Pipe, or SIP Industries.

Restrained Mechanical Joint (MJ) Adapters and Flanged Adapters: All restrained adapters shall conform to the latest revision of AWWA C111 and C110 for flanged adapters and AWWA C111 and C153 for MJ adapters. All restrained MJ and flanged adapters shall be manufactured by Ford Meter Box Co., or Sigma Corp.

Gate Valves: All gate valves shall meet or exceed the latest revision of AWWA Standard C515 for reduced wall, resilient-seated gate valves (or C509 for resilient-seated gate valves) and shall be provided with left hand to open, ductile iron (or cast iron) body with epoxy coating inside and outside complying with the latest revision of AWWA Standard C550, nut operated non-rising stem with 2" square operating nut, two O-ring stem seals above the thrust collar and one below, O-ring gaskets and 304 stainless steel bolts and nuts on bonnet and stuffing box and EPDM rubber encapsulated wedge (when available at no extra cost). All gate valves shall be manufactured by Mueller Company, M & H Valve & Fitting Company, Kennedy Valve Co., Clow Valve Co., American Flow Control, American AVK Co. or U.S. Pipe. Two inch and smaller gate valves shall be Class 125 with standard thread, bronze with wheel, and be manufactured by Milwaukee (No. 105) or Nibco.

Butterfly Valves: All valves greater than 12" nominal size shall be butterfly valves. All butterfly valves shall comply with the latest revision of AWWA Standard C504, and shall be provided with "O-ring" packing, left hand to open, nut operated with 2" square operating nut, ductile iron body, stainless steel shaft, resilient seat and heavy duty actuator. All butterfly valves shall be manufactured by Mueller Company, M & H Valve & Fitting Company, Pratt Company or Kennedy Valve Co.

Control Valves: All control valves shall be manufactured by Cla-Val Company. Model number, body construction, and flange drilling shall be as specified on the drawings. The drawing may indicate that the control valve will be supplied by California Water Service Company. All valves shall have factory set controls or pilots as specified on the drawings. All control or pilot piping shall be copper with bronze fittings. Vaults for control valves shall be as specified on the drawings.

Check Valves: Unless specified otherwise, all check valves shall be swing type with spring and lever and shall comply with the latest revision of AWWA Standard C508. The Valves shall have Class 125 flanged ends unless shown otherwise on the drawings. Check valves shall be manufactured by Mueller Company, Clow Valve Co., M&H Valve & Fitting Company, or Kennedy Valve Co.

Valves for Tapping: All gate valves for tapping purposes shall be Resilient Seat Type valves. The valve for tapping shall be manufactured by Mueller Co., Kennedy Valve Co. or Clow Valve Co.

Tapping Sleeves: All tapping sleeves shall be all stainless steel including flange and shall only be used when specified on the drawings. Tapping sleeves shall be JCM Model 432, Mueller Model H304, Smith Blair 662-663 or Ford style FTSS.

Valve Casings and Covers: All valve casings and covers shall be fabricated as shown on the latest revision of drawing CW-14 as applicable.

2" Ball Valves: Two inch ball valves shall be as shown on the drawing and shall be manufactured by Mueller Co., James Jones Company, Ford Meter Box Company, A.Y. McDonald Mfg Co., or Cambridge Brass.

Blow Off Assemblies: All materials for blow off assemblies shall be as shown on the latest revision of drawing CW-122.

Service Materials: All 1" and 2" service material specifications except copper tubing and plastic PE pipe shall be as shown on the latest revision of drawings CW-555, CW-436 or CW-1020 which includes alternate manufacturers. All service material specifications for services larger than 2" shall be as specified on the plan and/or as specified on the latest revision of the CW drawing for that size service.

Saddles: All saddles shall be as specified on the latest revision of the applicable size service standard drawing: 1" – CW-555 and 2" – CW-436 or CW-1020. Saddles are excluded from the low lead requirement by the Assembly Bill 1953, and thus need not conform to NSF 61 standards.

Solder: All solder shall be lead free.

Copper Tubing: All copper tubing shall conform to the latest revision of ASTM Specification B88 and be Type K soft.

Polyethylene (PE) Service Pipe: All PE plastic pipe for services shall comply with the latest revision of ASTM D2239 with a Standard Code Designation of PE 4710. Dimensions and tolerance of pipe shall be as specified in Table 3 of the latest revision of AWWA Standard C901 for PC 200 SIDR7. This is a high density polyethylene plastic pipe conforming to the inside-diameter dimensions of iron pipe sizes and having a 200 p.s.i. pressure rating.

Meter Boxes: For meters 1" services and 2" services shall be as specified on the latest revision of drawings CW-555, CW-436, or CW-1020. All meter boxes for services larger than 2" shall be as specified on the plans and/or as specified on the latest revision of the CW drawing for that size service. All meter boxes for 1" services and 2" services shall be supported by placing bricks or 2"x 4" pressure treated lumber under two sides of the base of the meter box.

Vaults: Vaults for appurtenances other than meters (such as Check Valves or Control Valves) shall be as specified on the drawings.

Machine Bolts: All steel bolts and nuts used for flanged fittings, flexible couplings, or other bolted appurtenances shall be 304 stainless steel. Ductile iron bolts are acceptable when the appurtenance is made of ductile iron and comes with option of ductile iron bolts, such as mechanical joint fittings. Anti-gual lubricant shall be used with stainless steel bolts & nuts.

PVC High Deflection Couplings: All PVC high deflection couplings shall conform to the latest revision of AWWA C-900 and shall be manufactured by CertainTeed.

PVC Closure Couplings: All PVC closure couplings shall conform to the latest revision of AWWA C-900 and shall be manufactured by CertainTeed.

Transition/Flexible Couplings: All Transition/Flexible Coupling shall comply with the latest revision of AWWA Standard C219 and shall be furnished with gaskets. The Company may require flexible couplings to be epoxy coated if soil conditions are determined to be corrosive. If the flexible coupling is steel, sleeve must be a minimum of 10 inches long. If the flexible coupling is ductile iron then a standard sleeve length may be used unless the drawing specifies otherwise. Flexible Couplings shall be manufactured by Smith-Blair, Inc., Ford Meter Box Company, or Romac Industries, Inc. Extended Range Coupling by Romac Industries, Inc. or Quantum Wide Range Coupling by Smith Blair can be used to accommodate a wider range of outer diameter for the same nominal size pipes.

Solid Sleeves: All solid sleeves shall be made of ductile iron and shall be manufactured by Tyler Pipe or Tyler Union Foundry.

Tracer Wire: Tracer wire shall be minimum #12 AWG solid copper wire with 45 mils of high molecular weight polyethylene (HMWPE) insulation, UL Listed, rated for direct burial, color blue and installed with all pipe including PVC, polyethylene and ductile iron pipe. For installation details see the latest revision of drawing CW-850.

Fire Hydrants: All fire hydrants shall be as specified on the district specific drawing or as approved by CWS Co. district personnel. For typical Fire Hydrant details see the latest revision of drawing CW-360.

Fire Hydrant Buries: All fire hydrant buryu shall be manufactured from Ductile Iron to ASTM A536 Standards and have a minimum working pressure rating of 200 PSI. Buryu shall be manufactured by Clow Valve Co., SBF, Inc., Sigma, or Star Pipe.

SPECIFICATIONS FOR INSTALLATION OF DUCTILE IRON AND POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND APPURTENANCES

Permits: All specification sheets, city/county or other environmental permits necessary for the installation of facilities must be obtained by the company and be on the job site prior to and during construction.

Compliance with all the Rules and Regulations of the California Occupational Safety and Health Act (CAL OSHA), Public Law 91–596, the "Williams' Steiger Occupational Safety and Health Act of 1970", is required on this project. The work practices for all pipe shall be in accordance with the latest revision of the American Water Works Association Publication C-206 Standard for Field Welding of Steel Water Pipe, C-600 Standard for Installation of Ductile Iron Mains and their Appurtenances, C-602 Standard for Cement–Mortar Lining of Water Pipelines in Place, C-604 Standard for installation of Steel Water Pipe, C-605 Standard for underground installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water, M23 Manual of Water Supply Practices for PVC Pipe–Design and Installation and M55 Manual of Water Supply Practices for PE Pipe – Design and Installation. "Fusible PVC Pipe" shall be installed per manufacturer's recommendations.

Please note direct discharge of highly chlorinated water to the environment is expressly prohibited. Refer to "Specifications for Dechlorination of Flushed Water" for more information. The Developer's Contractor shall comply with environmental laws and regulations as set forth by all federal, state and local agencies.

Materials: All materials installed for the facilities to be constructed by the Developer's Contractor must comply with the drawings and "Specifications for Material". No materials are to be supplied or furnished by California Water Service Company unless specifically indicated on the plans for special installations. All materials must be on the job site and inspected prior to start of construction. Any pipe, valve, or appurtenance whether installed or not, which in the opinion of the Company, does not meet the requirements of these specifications or otherwise found unfit, shall be rejected as being unfit, and shall be immediately removed from the job site.

Line and Grade: The horizontal and vertical alignment for installation of the pipe shall be established in the field by the Developer's Contractor in accordance with the plans and specifications. Location of water facilities including finished grades and elevations shall be staked with stakes set by the Developer's Project Engineer prior to start of construction. Final elevations of installed facilities, such as valves, hydrants, etc. shall be set and signed off by the California Water Service Company representative prior to acceptance of facilities.

Cover: Under normal conditions all mains shall be covered to a depth of four feet below the finished grade over the pipelines, unless specified otherwise on the plans. Prior approval must be obtained from California Water Service Company to install mains with greater or less than four feet of cover.

Separation between Water Mains and Non–potable pipelines or other Facilities: Water mains shall be at least 10 feet horizontally from and one foot vertically above, any parallel pipeline conveying sewage (untreated, primary, or secondary), disinfected secondary recycled water, and hazardous fluids, unless specified otherwise on the plans. Water mains shall be installed at least 4 feet horizontally from, and one foot vertically above, any parallel pipeline conveying tertiary recycled water or storm drainage. At crossings, water main shall be constructed no less than 45–degrees to and at least one foot above any pipeline indicated above. No connection joints shall be made in the water main within eight horizontal feet of the fluid pipeline. Water main shall not be installed within 100 horizontal feet of any sanitary landfill, wastewater disposal pond, or hazardous waste disposal site, or within 25 horizontal feet of the nearest edge of any cesspool, septic tank, sewage leach field, seepage pit, underground hazardous material storage tank, or groundwater recharge project. The State of California Department of Public Health Title 22 Article 4 Section 64572 "Water Main Separation" shall be followed when installations cannot meet the "Basic Separation Standards". A minimum vertical clearance of twelve (12) inches shall be maintained between the water main and all foreign structures, and a minimum horizontal clearance of five (5) feet shall be maintained between water mains and other utilities not mentioned above unless otherwise indicated on the plans or approved by the Company. Information shown on the plans for the location of or for information of water main installations crossing other proposed or existing facilities. Company approval must be obtained prior to making any changes from the plans. This includes changing grade or alignment to avoid other facilities encountered. Facilities or objects which may be encountered during installation. As per company standards, changes in cover over the pipeline may require the installation of a fabricated cement mortar lined and coated steel offset.

Workmanship: The pipe shall be installed to a true line and grade except on curves where ductile iron pipe may be installed with joint deflections between adjacent lengths of pipe not to exceed 3 degrees for ductile iron pipe sizes 6", 8", and 12". PVC pipe shall not be deflected at joints for horizontal or vertical deflection. No joint deflection shall be allowed in joints between fittings and pipe. "Certainteed" PVC Deflection Couplings shall be used with PVC C–900 between adjacent lengths of pipe to attain up to 5 degrees deflection at the joint when required.

When assembling a PVC pipe to an iron fitting, valve, or appurtenance (push–on), remove all but 1/4 inch of the factory mode bevel from the spigot end of the pipe. Bottom the pipe in the bell of the iron fitting.

Field–cut lengths of PVC and DI pipe may be used for making connections to valves, fittings, appurtenances, and closures where necessary. The cutting and beveling of the pipe for insertion into the bell shall be done by the use of a square cutting tool approved by the Company and manufactured for this purpose, without damage to the pipe. The bevel of the pipe shall be the same as required for the fitting.

Trench Bottom: The bottom of the trench shall be smooth and free from pieces of rock or other material that would tend to scratch, puncture or break the pipe or damage the polyethylene encasement used on ductile iron pipe. If rocks or stones are encountered, they shall be removed to a depth of six inches below bottom of trench and the void filled with material tamped to grade. A six inch layer of sand shall be placed in the trench bottom to provide a firm, uniform bedding for the pipe. The "bell holes" at the joints, except at the joints where bell holes shall be dug two inches below the surface so that the pipe will not be supported by the joint. Under no circumstances shall the bell hole undermine the support for the fittings or valves.

Valves and other various fittings may be required to be supported by a concrete cradle if it is determined by the Company that the bedding in the trench bottom can not be properly compacted to provide adequate support.

When an unstable subgrade condition is encountered that could provide inadequate pipe support, the Company shall require additional trench depth to be excavated, refilled and compacted with suitable foundation material.

No water main or appurtenance shall be laid in water, or when, in the opinion of the Company, the trench conditions or the weather are unsuitable for construction. Any water main which has been submerged shall be removed from the trench and be relaid. The trench shall be dewatered whenever running or standing water occurs in the trench bottom and the removal shall continue until the pipe has been installed and the backfill has been placed to a sufficient height to prevent the pipe from being submerged in water.

IMPORTANT: All trench excavations shall be in accordance with the Rules and Regulations of the California Occupational Safety and Health Act (CAL OSHA). This includes all necessary shoring determined by either the depth of trench and/or soil conditions.

Pipe and Appurtenances Handling: All water main and appurtenances shall be carefully lowered into the trench by means of padded slings, non–hooks tongs, or other suitable equipment consistent with safety, in such a manner to prevent damage to the exterior and interior pipe or appurtenance surfaces. Under no circumstances shall any material be dropped or dumped into the trench. Any foreign material inside the pipe shall be removed and the interior of the pipe kept clean during installation. All water main and appurtenance with damaged exterior or interior surfaces shall not be installed.

During installation the open ends of the pipe shall be covered at night or when no work is in progress at that point to prevent entrance of trench water, animals, or other foreign matter.

On all pipe, a continuous strip of tracer wire (per material specification) shall be taped to the top exterior surface of the pipe per the latest revision of drawing CW–850. Tracer wire splices using appropriate connectors are required at all locations where the wire is cut.

A polyethylene encasement shall be installed over ductile iron pipe, fittings, and appurtenances per latest revision of AWWA Standard C105 Polyethylene Encasement for Ductile Iron Piping and per the plans and specifications, or as requested and directed by the authorized Company representatives.

Note: Ductile iron fittings and appurtenances installed on PVC C–900 main shall require polyethylene encasement with a 2 feet overlap onto the PVC main. This overlap shall be secured to main per the latest revision of AWWA Standard C105.

Rubber Ring Joints for PVC C–900 and Ductile Iron Pipe: Push–on type rubber ring joints with rubber rings for integral bell ends shall be joined as follows: The ring groove, bell socket and plain end should be wiped clean. Insert the gasket making sure that it faces the proper direction and that it is correctly seated. The plain end shall be beveled and free of any sharp or ragged edges which may damage or dislodge the gasket. Lubricate the entire outside end of the pipe including the pipe bevel, also lubricate the exposed portion of the rubber ring gasket in the bell (See "pipe joint lubricant" below). Push the plain end into the bell by hand or with the use of a bar and block until it is appropriately seated per pipe manufacturer's recommendations, keeping the joint straight while pushing. Construction machinery shall not be used to push the pipe into a pipe bell end or a fitting bell end. After assembly, the resulting position of the rubber ring shall be checked with a feeler gauge.
If "Field Lok" or "Sure–Stop" gaskets are specified on the plans, the gasket shall be installed in accordance with the manufacturer's recommendations.
If "TR FLEX" or "Thrust–Lok" restrained joint system is specified on the plans, the joint assembly shall be installed in accordance with the manufacturer's recommendations.

If PVC "Certa–Lok" VIP Restrained Joint Pipe is specified on the plans, the joint assembly shall be installed in accordance with the manufacturer's recommendations.

Pipe Joint Lubricant: Pipe joint lubricant shall be as specified by the pipe manufacturer and shall be NSF approved for use in potable water systems.

Mechanical Joints: Mechanical joints shall be joined as follows: The socket and plain end should be wiped clean and any excess coating in the bell should be removed. The plain end, bell socket, and gasket should be washed with a soap solution or lubricant furnished with the gaskets to improve the seating of the gasket in the socket and to help the various parts slide together along the pipe. Place the gland on the plain end with the lip extension toward the plain end of the pipe, followed by the gasket with the narrow edge of the gasket toward the end of the pipe. Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during the assembly. Push the gland toward the socket and center it around the pipe with the gland lip against the gasket. Insert bolts and hand tighten nuts. Partially tighten the bottom bolt first; then the top bolt; next the bolts at either side, and finally the remaining bolts. Repeat this process until all bolts are torqued to a value between 75 and 90 ft–lbs.

If restrained mechanical joint adapters are specified on the plans, the adapter assembly shall be installed in accordance with the manufacturer's recommendations.

Underground Protection: All flexible couplings, bare steel, MJ x MJ sleeves, and all bolts (including stainless steel) shall be protected as follows.

The entire area of the fitting should be dry and free of dust, dirt or other foreign matter. Rust or other foreign material should be removed by scraping or wire brushing. Wiping with dry clean cloth may be necessary to remove particles from brush cleaning. Any oil or grease must be removed using a low residue volatile petroleum solvent before application of grease and wrapping.

The exposed area should be coated with a heavy coating of Metalguard #301 grease by the glove method to a thickness of at least ¼".

The entire grease area should be firmly wrapped with at least two layers, half lapped, of a woven glass filament mesh (Bas or Bit Wrap, 4" wide). Metalguard #301 grease with a minimum of ¼" thickness should be applied between each layer during wrapping, working the grease into mesh openings.

The entire mesh wrapped area of the fitting should be covered with a third and final coating of at least ¼" thick of Metalguard #301 grease by the glove method.

Two layers of polywrap, half lapped, should be firmly applied over all areas of the coated and wrapped fittings. Overlaps shall be taped. Follow immediately after this wrapping.

Thrust Blocks: Concrete thrust blocks shall be provided for all fittings to prevent movement when the main is under pressure. This includes tees, elis, reducers, caps and plugs. Forms are required and are to be provided by the Developer's Contractor. These forms shall be smooth, mortar tight and of sufficient strength to withstand the concreted loadings for the concrete. All concrete thrust blocks shall be constructed per the latest revision of drawing CW–435 or as specified in the drawings.

Embedment Backfill: The embedment backfill is 6 inches of sand bedding below the pipe and 12 inches of sand backfill above the pipe (see sand definition below). Care must be taken to compact the sand backfill material solidly around and under the pipe. Small tampers and vibrators are allowed for compacting near the pipe and near the pipe after a minimum of 6 inches of sand backfill has been placed over the pipe. Flooding, jetting or puddling may be employed for compaction in the first lift although great care must be taken to prevent drainage of sand from the trench. Mechanical tampers are required for complete saturation. Erosion of support at the pipe sides and bottom by water jetting must be prevented. Rocks or hard lumps are not permitted in the embedment backfill or final backfill.

Sand is defined as material free from organic matter and clay with a sieve gradation by weight as follows:

Sieve Size	% Passing Sieve
No. 4	100
No. 200	0–5

Final Backfill: In areas where required, the permanent pavement and temporary pavement replacement must comply with specifications of the local governing authorities. All backfill above the sand embedment backfill must meet compaction requirements of the local governing agency. All pavement broken shall be replaced in strict accordance with the requirements of the local authorities, or lacking local requirements, in accordance with the latest revision of drawing CW–236.

Other Facilities: All existing facilities, such as but not limited to sewers, storm, gas mains, water mains, telephone conduits, and power or telephone poles which may be located close to trench operations must be protected by the Developer's Contractor. If any of these facilities are damaged by the Developer's Contractor, repairs shall be made to the satisfaction of the interested parties at the Developer's expense.

Valve Casings and Covers: A valve casing with cover shall be installed for each gate valve, butterfly valve, blow off assembly or when specified on the plans per the latest revision of drawing CW–438. The valve cover and frame for valves in paved and unpaved areas shall be per the latest revision of drawing CW–14. The valve cover frame shall be set in a ring of concrete a minimum of 24" in diameter and three inches thick or per local governing agency's requirements if greater. All valve casing covers must be placed flush with the finished grade of the surrounding area.

Blow Off Assemblies: A blow off assembly as shown on the latest revision of drawing CW–122 shall be installed for each dead end capped main. The assembly is to include a valve casing and cover.

Services and Meter Boxes: Services and meter boxes shall be installed as shown on the latest revision of drawings CW–555 for 1" services, CW–436 or CW–1020 for 2" services, and for larger than 2" services as designated on the plans and/or the latest revision of the CW drawing for that size service. The 1" and 2" services shall be installed to a depth of 30" or more from finished grade over the service pipe and in no event shall the depth be less than 18". The Developer's Contractor must get prior approval from the Company to install service pipe with less than 30" of cover.

All meter box locations must be approved by the Company and the boxes must be installed flush with finished grade of the surrounding area at the meter box cover. The meter boxes for 1" and 2" services shall be supported by placing 2"x4" treated lumber or bricks on two sides of the meter box's base. Avoid postal and street pedestals, driveways, trees/bushes, fencing, sewer lines, and other utilities.

Saddles and saddle tapping are required for all service connections made on PVC pipe. When making this type of connection, proper equipment must be used which attaches to the corporation stop and completely encircles the pipe. The tapping tool shall be designed to cut a hole in the pipe. It is important that the cutting tool be a sharp shell type (hole) cutter which will retain the coupon and be designed to accommodate walls as heavy as DR 14. The shell cutter should be lubricated on the outside only and not on the inside or on the cutter with a recommended lubricant. Do not drill a hole in the PVC pipe with a twist drill or auger bit.

Direct tapping machines for service connections on ductile iron pipe must be approved by California Water Service prior to direct tapping ductile iron mains. Plastic PE pipe is to be cold flared to match recessed fittings or is to have saddle and bevels for insertable fittings. Forming tool for bevels shall be Mueller's beveling tool number H10817 or approved equal.

Connection to Existing System: Only the Company is allowed to make the connection to the existing system. The Developer's Contractor shall furnish to the Company the necessary fittings, valves, pipe, and joint materials to connect the new installation to the existing system. The Developer's Contractor must adjust from the nominal line and grade to match the existing facilities. The Developer's Contractor to complete piping and maintain the specified clearance from existing mains as shown on the drawings. The Developer's Contractor shall make the excavation for the tie–in. The trench shall be left in a safe condition for the Company to complete the connections. If the trench is considered unsafe for workers, the Company may require the Developer's Contractor to make adequately excavate for the tie–ins at the Contractor's expense. After the Company has completed the connection, the Developer's Contractor shall install concrete thrust blocks, install valve casings and covers, and backfill the excavation. The Developer's Contractor shall then replace any pavement that was cut for the excavation.

Pressure Test: Prior to any testing, at least seven days should elapse after the last concrete thrust block was poured if Type I portland cement was used and three days if high–early–strength Type III portland cement was used. A preliminary pressure test shall be made by filling the mains with water and allowing them to stand under regular system pressure for a period of at least twenty–four hours. After completion of the preliminary test, the Developer's Contractor shall make a hydrostatic test by raising the pressure in the main to 50 pounds per square inch above the normal static pressure at the point of observation with a minimum test pressure of 150 pounds per square inch. A calibrated pressure chart recorder and a water meter shall be provided by California Water Service Company. The hydrostatic test shall not be commenced until all newly installed concrete has cured. The pressure that the test is started at shall be maintained for a minimum of four hours. The test shall start and finish at the same pressure. If there is a pressure drop, the Developer's Contractor shall pump more water into the main through the water meter to bring the main back to its starting pressure. The leakage is the calculated volume of water pumped into the main through the meter. The leakage shall be measured accurately during the test period to determine that the leakage rate does not exceed the values shown in Table IA for ductile iron pipe and Table IB for PVC C–900 pipe. There shall be no leakage, zero gallons per four hours test period at test pressure for the portion of pipeline that is steel pipe CL&C with welded joints, HDPE pipe with fused joints, and fusible PVC pipe. An air test may be used as an alternate method on the steel pipe CL&C with welded sections. Test pressure to be held for a four–hour duration, with no volumetric loss during test period. A calibrated pressure chart recorder will be provided by California Water Service Company. The necessary taps, connecting pipe, and valve fittings shall be provided by the Developer's Contractor. Any leaks or failures that develop during the test shall be repaired by the Developer's Contractor immediately.

If the mains fail to meet requirements of the hydrostatic test, the Developer's Contractor shall, at his expense, make repairs to reduce the leakage. The repair work shall be continued until a satisfactory test is made.

Disinfection of Mains: All mains that are installed by the Developer's Contractor shall be disinfected by the Developer's Contractor in accordance with the "Specifications for Disinfection of New Mains."

Inspection: The Company reserves the right of access to the work at all times for the purpose of inspecting and the Developer's Contractor shall permit the Company's representative to make an inspection at any time. The Developer's Contractor shall notify the Company's local manager at least 48 hours prior to any work being started at the project site. The Company will normally provide no more than 2 inspections per day during normal working hours. The trench must be left open until the Company has inspected the new installation and approved that portion of trench to be covered. If the trench is covered prior to the Company's inspection, the Developer's Contractor will be required to uncover the trench at the Developer's expense.

Protection: The Developer's Contractor shall at all times provide suitable and adequate danger signals and barricades. If necessary, the Developer's Contractor shall also provide temporary bridges across the trench to permit free ingress and egress to and from private driveways or traveled roads or streets. No street shall be closed unless a permit has been obtained from the appropriate authority.

Specifications and Drawings: Specifications and drawings shall be taken together and anything shown on the drawings and not covered by the specifications or covered by the specifications and not shown on the drawings shall be considered as though it were covered by both specifications and drawings. Any points of disagreement should be referred to the Company's representative as soon as possible to resolve any possible misunderstandings.

Clean Up: Upon completion of the work, the Developer's Contractor shall remove all rubbish and waste materials resulting from the Contractor's operations and leave the ground along the route of the pipeline in a neat and clean condition. The Developer's Contractor shall be responsible for removal of all excess spoil from the trench excavations, the Company shall not accept any responsibility.

Guarantee of Workmanship: Notwithstanding Owner's acceptance of the new facilities, the Developer's Contractor shall guarantee all of his workmanship for a period of one calendar year from and after acceptance of the work by the Owner. The Developer shall be responsible for having the Contractor repair and make good, any defective workmanship or imperfections in the work at his sole cost and expense. If deficiencies develop during the Guarantee calendar year, such as but not limited to: leaks in the pipeline or appurtenances, settlement of trenches, or deteriorating pavement due to faulty or imperfect workmanship, the owner retains the right of making repairs and the Developer is responsible for the cost of said repairs.

TABLE IA
ALLOWABLE LEAKAGE PER 1000 FT. OF DUCTILE IRON PIPELINE

Average Test Pressure	Nominal Pipe Diameter — Inches							
	6	8	10	12	14	16	18	24
(PSI)	GALLONS PER HOUR (GPH)*							
200	0.57	0.76	0.96	1.15	1.34	1.53	1.72	2.28
175	0.54	0.72	0.89	1.07	1.25	1.43	1.61	2.15
150	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.99

*If the pipeline under test contains sections for various diameters, the allowable leakage will be the sum of the computed leakage for each size.

TABLE IB
ALLOWABLE LEAKAGE PER 1000 FT. OF PVC C–900 PIPELINE

Average Test Pressure	Nominal Pipe Diameter — Inches				
	6	8	10	12	
(PSI)	GALLONS PER HOUR (GPH)*				
200	.57	.76	.96	1.15	
175	.54	.72	.89	1.07	.89
150	.50	.66	.83	.99	.82

*If the pipeline under test contains sections for various diameters, the allowable leakage will be the sum of the computed leakage for each size. For example, Allowable Leak for 500' of 8" PVC under test pressure = 500'/1000' x 0.66 GPH x 4 Hour = 1.32 Gallons

SPECIFICATIONS FOR DISINFECTION OF NEW MAINS BASED ON THE PROCEDURES OUTLINED IN THE ANSI/AWWA C651–05

GENERAL INSTRUCTIONS

1. Precautions shall be taken to prevent soiling of pipe, fittings, valves and other materials. Pipe and fittings shall be stored above the ground. Valves and all other materials shall be stored in a clean, dry location. Particular care shall be taken to keep rubber gaskets and pipe ends clean, dry, and out of the sun to avoid degradation of materials.

2. All pipe shall be free of foreign materials and debris before lowering the pipe into the trench.

3. When the main is left unattended for any length of time, the ends shall be plugged or completely wrapped to prevent the entrance of foreign material or small animals.

4. Loading of new mains: A reduced pressure principle (RP) backflow prevention assembly (USC approved and lead–free compliant) is required to be installed in line with the domestic supply line at the point of connection to prevent any hazardous, unsanitary, polluted and/or contaminated water from entering the distribution system. RP must be sized appropriately to factor pressure loss through the assembly while still meeting adequate flushing velocity requirements.

The Developer's Contractor is responsible for providing a backflow prevention assembly that has been tested and passed within the previous twelve months. The most recent test report is to be provided to the Cal Water Inspector who will maintain a record and will document the make and model number, serial number, and most recent test date on the New Main Disinfection Report in non–areasable ink or pen writing.

5. Apply the NSF–grade or equivalent hypochlorite solution or H.T.H. tablets/granules, using one of the methods described under "Chlorine Application Methods." A Cal Water Inspector is to measure the chlorine concentration to ensure that a minimum 50 ppm concentration has been applied to the entire length of the pipeline. The initial reading must be documented on the New Main Disinfection Report in non–areasable ink or pen writing. Samples with a high chlorine concentration must be analyzed with a high range total chlorine test kit. Hach Model Number SK–212 or equivalent may be used for this purpose. The chlorine test kit must use non–expired reagents and shall be verified on a periodic basis prior to field use.

6. Obtain the temperature reading at the time of loading, and document on the New Main Disinfection Report in non–areasable ink or pen writing. Allow heavily chlorinated water to stand therein for a contact period of at least twenty–four hours. If the water temperature is less than 41°F, the water shall remain in the pipe for at least 48 hours. A California Water Service Company Inspector is to measure the chlorine residual after the appropriate contact period.

When using the tablet method, there must be a detectable free chlorine residual at the end of the required hold time.

When using hypochlorite solution method, the free chlorine residual must be at least 10 ppm at the end of the required hold time. If the chlorine concentration has dropped to less than 10 ppm, then the pipeline shall be thoroughly flushed and re–loaded, superchlorinated by the continuous feed method, and the required contact period shall be repeated due to high chlorine demand. Equipment used to superchlorinate by the continuous feed method will be provided by the Developer's Contractor.

7. The Cal Water Inspector must measure or obtain upstream distribution system chlorine residual, which will be used for comparison after flushing. All water must be flushed thoroughly at all available blow offs and hydrants. (See Specifications for Dechlorination of Flushed Water). After flushing, the chlorine residual coming out of the new main must match the chlorine residual upstream within the new main, indicating that adequate flushing was performed. The Developer's Contractor should re–install the caps/plugs back on the blow off. If Cal Water has obtained a sample from entering the blow off after flushing. The Cal Water Inspector must document the final chlorine residual on the New Main Disinfection Report in non–areasable ink or pen writing.

8. The Company's representative will collect two bacteriological sample sets at a minimum of 18, to 30 hours apart and have them analyzed for Total coliform, E.coli, and heterotrophic plate count (HPC).

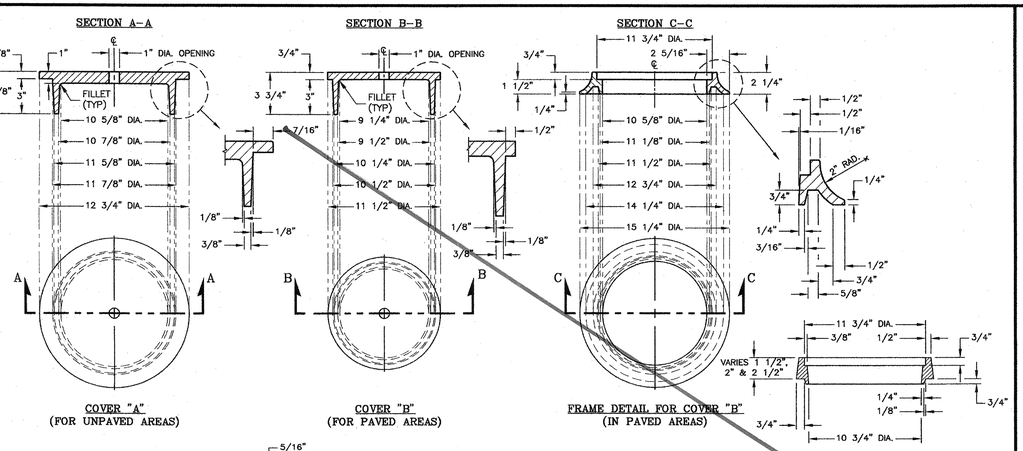
The samples should be taken from a combination blow off illustrated in the latest revision of drawing CW–638, sampling device illustrated in the latest revision of drawing CW–914 or a service located near the end of the chlorinated section. All sample taps must be evaluated for the potential for contamination, cross–connections, or other factors that may result in non–representative sampling. The hose bib sampling device is recommended for any sample collected from a service hose bib.

In accordance with the latest revision of AWWA standard C651, samples shall be collected every 1,200 ft., from the end of the line, and from each branch or dead–end.

All Total coliform, E.coli, and HPC results must be documented on the New Main Disinfection Report in non–areasable ink or pen writing. A copy of the laboratory result must also be attached to the New Main Disinfection Report.

9. If the bacteriological tests are positive, or if the HPC results are greater than 500 CFU/ml, further flushing and disinfection procedures will be necessary. Any positive follow–up sample tests or HPC>500 CFU/ml requires the Developer's Contractor to thoroughly flush, re–load, and superchlorinate the new main by the continuous feed method. Repeat Steps 7–8. All sample results (coliform and confirmation) must be documented on the appropriate location on the New Main Disinfection Report in non–areasable ink or pen writing. The Water Quality department must be notified if the bacteriological and HPC results continue to show positive results.

10. The Cal Water Inspector and Supervisor will complete, sign, and submit the New Main Disinfection Report to the Water Quality Program Manager (WQPM) for review and approval. Approval will be based on two consecutive sets of sample results that are absent of total coliform, E.coli, HPC less than 500 CFU/ml, and a final chlorine residual that is representative of background residual in the distribution system. The WQPM will sign and approve the Report if the main is determined acceptable to be placed into service based on the above crite

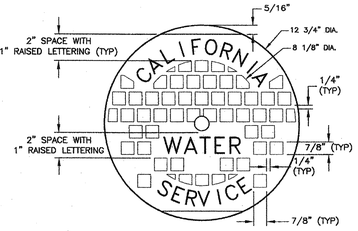


COVER "A" (FOR UNPAVED AREAS)

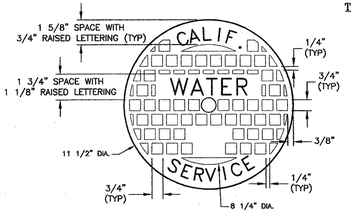
COVER "B" (FOR PAVED AREAS)

FRAME DETAIL FOR COVER "B" (IN PAVED AREAS)

TYPICAL CENTER SECTION OF FRAME RISER (FOR PAVED AREAS)



TOP VIEW OF COVER "A"



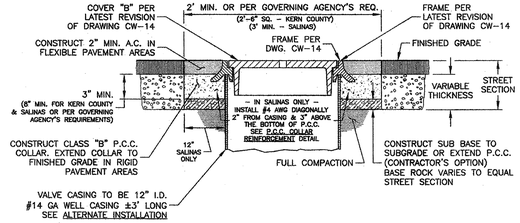
TOP VIEW OF COVER "B"

NOTE: LETTERING AND DETAILS SHALL BE RAISED 1/8" ABOVE FACE OF COVER "A" AND "B".

NOTES:

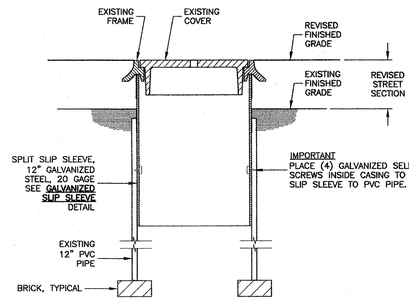
1. Frame, cover and casing extensions to be of good quality domestic cast iron, free from flaws and blow holes, and of sufficient strength to resist breakage by street traffic.
2. Castings to be true, and if necessary to be trimmed on emery wheel to prevent rocking of cover in any position in the frame.
3. See latest revision of drawing CW–439 for valve cover, casing, and frame installation details.
4. Cover "A" does not have a matching cast frame.

CW 14R6 — VALVE COVER AND FRAME FABRICATION DETAILS FOR PAVED AND UNPAVED AREAS

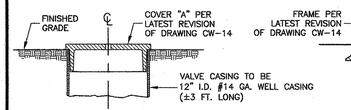


STANDARD PAVED AREA INSTALLATION
N.T.S.

NOTE: TO EXTEND AN EXISTING STANDARD PAVED INSTALLATION: REMOVE FRAME, ADD STANDARD CAST FRAME RISER PER LATEST REVISION OF DRAWING CW–14, OR TACK WELD ADDITIONAL STEEL CASING AS REQUIRED, REPLACE FRAME.

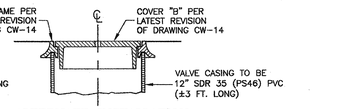


EXISTING PAVED AREA PVC CASING AND SLIP SLEEVE EXTENSION
N.T.S.



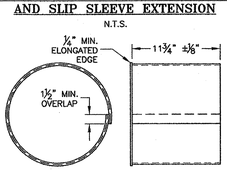
STANDARD INSTALLATION (IN UNPAVED AREAS)

NOTE: TO EXTEND AN EXISTING STANDARD UNPAVED INSTALLATION: REMOVE COVER, TACK WELD ADDITIONAL STEEL CASING AS REQUIRED, AND REPLACE COVER.

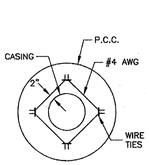


ALTERNATE INSTALLATION (IN PAVED AREAS)

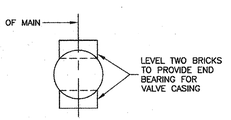
NOTE: TO EXTEND PVC CASING IN PAVED AREA: SEE EXISTING PAVED AREA PVC CASING AND SLIP SLEEVE EXTENSION DETAIL.



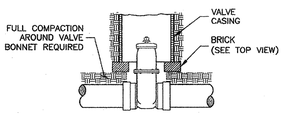
GALVANIZED SLIP SLEEVE
N.T.S.



P.C.C. COLLAR REINFORCEMENT (SALINAS ONLY)
N.T.S.



VALVE CASING FOOTING TOP VIEW
N.T.S.



VALVE CASING FOOTING SIDE VIEW
N.T.S.

CW 439R6 — VALVE CASING, COVER, AND FRAME INSTALLATION DETAILS

THRUST BLOCK SCHEDULE

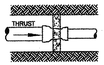
PIPE SIZE	FITTING	TYPE OF SOIL: SOFT CLAY (1000 P.S.F.) MIN. BEARING AREA (SQ. FT.)	SOFT CLAY DIMENSION (FEET) A	SOFT CLAY DIMENSION (FEET) B	SAND (2000 P.S.F.) MIN. BEARING AREA (SQ. FT.)	SAND DIMENSION (FEET) A	SAND DIMENSION (FEET) B	ROCK (3000 P.S.F.) MIN. BEARING AREA (SQ. FT.)	ROCK DIMENSION (FEET) A	ROCK DIMENSION (FEET) B
6"	PLUG, CAP	6	3	2	3	2	1.5	2	2	1
	90° ELL	8	3.2	2.5	4.1	2.7	1.5	3	2	1.5
	45° ELL	4.4	2.2	2	2.3	1.5	1.5	1.5	1.5	1
	22 1/2° ELL	2.3	1.5	1.5	1	1	1	1	1	1
	TEE W/ 6"OUTLET	6	3	2	3	2	1.5	2	2	1
8"	PLUG, CAP	10	4	2.5	5	2.5	2	3.3	2.2	1.5
	90° ELL	14	4	3.5	7	2.8	2.3	5	2.5	2
	45° ELL	7.5	3	2.5	3.8	2	1.9	2.6	1.7	1.5
	22 1/2°ELL	4	2	2	2	2	1	1.5	1.5	1
	TEE W/8"OUTLET	10	4	2.5	5	2.5	2	3.3	2.2	1.5
12"	PLUG, CAP	24	6	4	12	4	3	7.5	3	2.5
	90° ELL	32.5	6.5	5	16.1	4.6	3.5	10.8	3.6	3
	45° ELL	17.5	5	3.5	8.8	3.5	2.5	6	3	2
	22 1/2° ELL	9	3.6	2.5	4.6	2.3	2	3	2	1.5
	TEE W/12"OUTLET	24	6	4	12	4	3	7.5	3	2.5
14"	PLUG, CAP	31.5	6.3	5	15.8	4.5	3.5	10.5	3.5	3
	90° ELL	44.4	7.4	6	22	5.5	4	14.7	4.2	3.5
	45° ELL	24	6	4	12	4	3	8.1	3	2.7
	22 1/2° ELL	12	4	3	6	3	2	4	2	2
	TEE W/ 14"OUTLET	31.5	6.3	5	15.8	4.5	3.5	10.5	3.5	3
16"	PLUG, CAP	40.7	7.4	5.5	20	5	4	13.5	4.5	3
	90° ELL	56	8	7	28.8	6.4	4.5	20	5	4
	45° ELL	31	8.2	5	15.8	4.5	3.5	10.5	3.5	3
	22 1/2° ELL	15.8	4.5	3.5	7.8	3	2.6	5.2	2.6	2
	TEE W/ 16"OUTLET	40.7	7.4	5.5	20	5	4	13.5	4.5	3
18"	PLUG, CAP	52	8	6.5	26.4	6.6	4	17.5	5	3.5
	90° ELL	75	10	7.5	37	7.4	5	24.8	6.2	4
	45° ELL	40.7	7.4	5.5	20	5	4	14	4	3.5
	22 1/2 ELL	20	5	4	10.5	3.5	3	6.9	3	2.3
	TEE W/ 18"OUTLET	52	8	6.5	26.4	6.6	4	17.5	5	3.5

NOTE:
1. THRUST BLOCKS DESIGNED FOR A MAXIMUM OF 150 PSI WATER PRESSURE
2. ALL CONCRETE SHALL CONTAIN 6 SACKS OF CEMENT PER CUBIC YARD.
3. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
4. KEEP ALL CONCRETE CLEAR OF THE JOINTS ON ALL FITTINGS.
5. FORMS ARE REQUIRED ON ALL THRUST BLOCKS AND TO BE SUPPLIED BY CONTRACTOR. ALL FITTINGS TO BE WRAPPED WITH POLYETHELENE PRIOR TO POURING THRUST BLOCKS.



TEE & SOLID PLUG

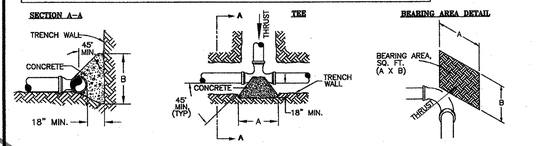
NOTE: SEE PLANS FOR SIZE & DETAIL OF CONCRETE BLOCK WHEN REQUIRED FOR REDUCER.



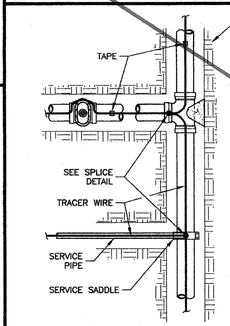
REDUCER



90° ELL



CW 435R4 — TYPICAL THRUST BLOCK INSTALLATION



PLAN VIEW

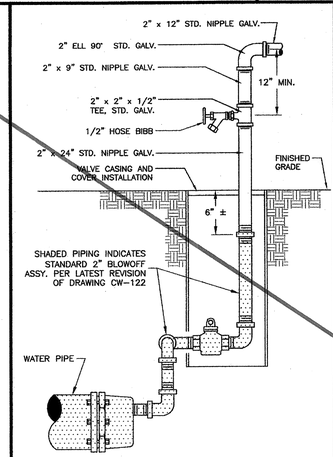
STEPS:
1. STRIP 1" OF INSULATION FROM END OF EACH WIRE.
2. TWIST WIRES TOGETHER WITH PLIERS.
3. PLACE SPLICE CAP OVER TWISTED WIRES AND CRIMP WITH CRIMPING TOOL.
4. BEND CRIMP FLAT WITH WIRE.
5. WRAP SPLICED CONNECTION WITH RUBBER MOLDING TAPE, COMPLETELY COVERING BARE WIRE.

–OR–

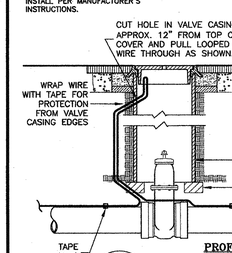
USE WATERTIGHT DIRECT BURY TWIST–ON ENCLOSURES OR APPROVED EQUAL AND INSTALL PER MANUFACTURER'S INSTRUCTIONS.



SPLICE DETAIL FOR CUT WIRES



CW 638R1 — SAMPLING DEVICE FOR 2" BLOW–OFF

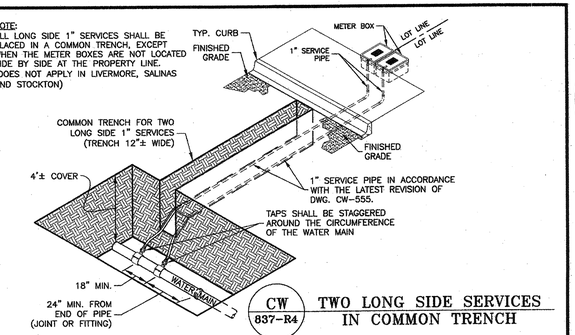


PROFILE VIEW

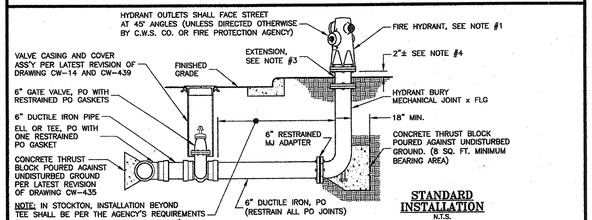
CW 850R4 — STANDARD INSTALLATION DETAILS FOR TRACER WIRES

NOTES:
1. CONTRACTOR SHALL USE CARE TO PREVENT DAMAGE TO TRACER WIRE DURING INSTALLATION.
2. ALL WIRE SHALL BE SOLID COPPER WITH 45 MILS OF HIGH MOLECULAR WEIGHT POLYETHYLENE (HMWPE) INSULATION, UL LISTED, RATED FOR DIRECT BURIAL, MINIMUM SIZE AWG 12. COLOR BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER.
3. TRACER WIRES SHALL BE INTER–CONNECTED AT TEES, CROSSES, PE SERVICES, AND CUT WIRES WITH SPLICE CONNECTORS.
4. ENOUGH SLACK OF TRACER WIRE SHALL BE EXTENDED INTO VALVE CASING AND METER BOX FOR FUTURE ACCESS. LOOPED WIRE SHALL BE PULLED INTO VALVE CASING AS SHOWN ON "PROFILE VIEW" ABOVE. TRACER WIRE SHALL BE TAPED TO BLOW OFF ASSEMBLY AT DEAD ENDS AND TO ANGLE METER STOP AT END OF SERVICE CONNECTIONS.
5. CONTINUITY TESTS SHALL BE CONDUCTED WHEN REQUIRED BY A CAL WATER REPRESENTATIVE.
6. TRACER WIRE SHALL BE REQUIRED ON ALL MAINS.

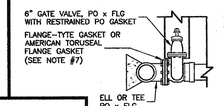
NOTE: ALL LONG SIDE 1" SERVICES SHALL BE PLACED IN A COMMON TRENCH, EXCEPT WHEN THE METER BOXES ARE NOT LOCATED SIDE BY SIDE AT THE PROPERTY LINE. (DOES NOT APPLY IN LIVERMORE, SALINAS AND STOCKTON)



CW 837–R4 — TWO LONG SIDE SERVICES IN COMMON TRENCH



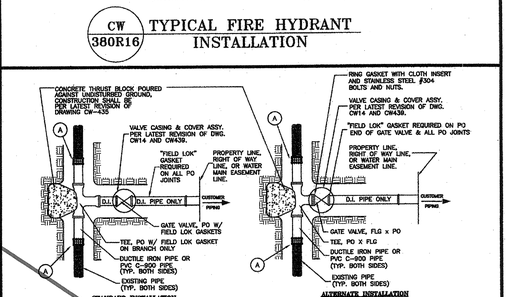
STANDARD INSTALLATION
N.T.S.



ALTERNATE INSTALLATION
N.T.S.

NOTES:
1. For district specific fire hydrant models and requirements, see District fire hydrant form, note 1B on main extension drawing, or verify with C.W.S. Co. representative.
2. All fire hydrant materials shall comply with latest C.W.S. Co. material specifications.
3. A hydrant extension may be required to adjust for finished grade.
4. For wet barrel hydrants this dimension is from finished grade to bury's flange or extension's flange when an extension is required.
5. Push–on, flanged fitting joints, and/or threaded–flanged risers may be required in certain fire protection districts. Verify with C.W.S. Co. representative all fire hydrant material prior to the installation. (In Stockton verify with the fire protection agency that has jurisdiction.)
6. Fire hydrant barricades shall be required when a vertical or rolled curb does not exist, or when the fire hydrant needs to be protected from moving vehicles, per latest revision of drawing CW–822.
7. All machine bolts and nuts shall be 304 stainless steel, except for break–off bolts.
8. A 90° elbow with restrained push on joints may be required for the fire hydrant installation when space is limited and the hydrant lead must run parallel to the main or the location of the fire hydrant requires the bend.
9. Protect all underground bolts and nuts per C.W.S. Co. standard coating specification.
10. A break–off check valve may be required in sloped terrain as specified by district personnel. Use Clow Model LB400 or approved equal.

CW 380R16 — TYPICAL FIRE HYDRANT INSTALLATION



TYPICAL MATERIALS FOR ____ INCH FIRE SERVICE:
1 – ____" x ____" TEE PO CL DI
1 – ____" GATE VALVE FLG X PO WRS NO RS
1 – VALVE CASING AND COVER ASSEMBLY
___ – FEET OF ____" DUCTILE IRON PIPE (FOR FIRE SERVICE RUN)
___ – 20" POLYWRAP TUBING 8 MIL W/PVC TAPE
___ – ____" "FIELD LOK" GASKET F/PO
___ – FEET OF ____" DUCTILE IRON PIPE OR PVC C–900 PIPE (FOR TEE RUN)

NOTES:
1. A DOUBLE CHECK VALVE OR REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY IS REQUIRED.
2. POLYETHYLENE ENCASEMENT WITH PVC TAPE IS REQUIRED FOR ALL DUCTILE IRON PIPE AND ALL FITTINGS.
3. PROTECT ALL UNDERGROUND BOLTS, NUTS, FLEX COUPLINGS, AND BARE STEEL PER C.W.S. CO. PROTECTION COATING SPECIFICATIONS.
4. BLOCK AND POUR CONCRETE THRUST BLOCKS ON ALL ELLS, TEES, AND CAPS, PER LATEST REVISION OF DRAWING CW–435.
5. THE USE OF "FIELD LOK" GASKETS DOES NOT ELIMINATE THE NEED FOR CONCRETE THRUST BLOCKS.

TYPICAL MATERIALS FOR ____ INCH FIRE SERVICE:
1 – ____" x ____" TEE PO X FLG CL DI
1 – ____" GATE VALVE FLG X PO WRS NO RS
1 – VALVE CASING AND COVER ASSEMBLY
___ – FEET OF ____" DUCTILE IRON PIPE (FOR FIRE SERVICE RUN)
___ – GAL. METAL GUARD #301
1 – ROLL BIT OR RES WRAP
___ – 20" POLYWRAP TUBING 8 MIL W/PVC TAPE
___ – ____" "FIELD LOK" GASKET F/PO
___ – FEET OF PVC C–900 PIPE OR DUCTILE IRON PIPE (FOR TEE RUN)

FLANGE MATERIAL – CHECK ONE BOX
☐ 1 – 4" FLANGE TYTE GASKET 8 – 5/8" ø x 3" #304 SS MACHINE BOLTS W/ HN
☐ 1 – 6" FLANGE TYTE GASKET 8 – 3/4" ø x 3–1/2" #304 SS MACHINE BOLTS W/ HN
☐ 1 – 8" FLANGE TYTE GASKET 8 – 3/4" ø x 3–1/2" #304 SS MACHINE BOLTS W/ HN
☐ 1 – 10" FLANGE TYTE GASKET 12 – 7/8" ø x 4" #304 SS MACHINE BOLTS W/ HN

MATERIAL FOR ITEM (A) (EITHER INSTALLATION)	
TIE–INS FROM D.I. TO D.I. OR PVC C–900 OR ACME(<10"DIA.) USE SOLID SLEEVE MJ TIE–INS FROM D.I. TO CI USE SOLID SLEEVE MJ DUAL PURPOSE	TIE–INS FROM D.I. TO CO. STEEL USE CO STEEL X DI FLEX. COUPLING (10" SLV IF STL. OR STD SLV IF DI.)
TIE–INS FROM D.I. TO ACRS (ASBESTOS CEMENT ROUGH BARREL) USE ACRS X DI FLEX. COUPLING (10" SLEEVE IF STEEL OR STANDARD SLEEVE IF DUCTILE IRON).	TIE–INS FROM D.I. TO STD STEEL USE STD X DI FLEX. COUPLING (10" SLV IF STL OR STD SLV IF DI.) TIE–INS FROM PVC C–900 TO PVC C–900 USE "CONTARMEX" PVC CLOSURE COUPLING

CW 840R4 — STANDARD PRIVATE FIRE SERVICE CONNECTION

ENGINEERING

CALIFORNIA WATER SERVICE

DEPARTMENT

REVISIONS:

DATE: INIT.

DISTRIBUTION MAP
PLAT SHEET
SYSTEM SCHEMATIC
STATION SCHEMATIC

PLAT SHEET NO.:

SCALE: N.T.S.

DRAWN BY: M. FONG

DESIGNED BY:

CHECKED BY: DATE:

APPROVED BY: DATE: 5/12/2016

TITLE: CALIFORNIA WATER SERVICE COMPANY STANDARD DRAWINGS

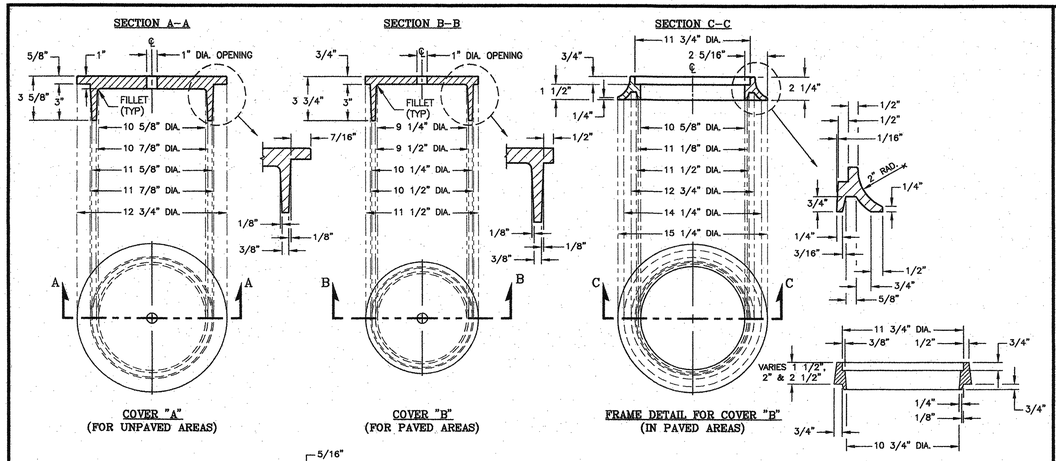
DISTRICT: ALL

DATE: 5/12/2016

PROJECT ID.:

DRAWING NO.: CWDWGS

SHT 1 OF 2

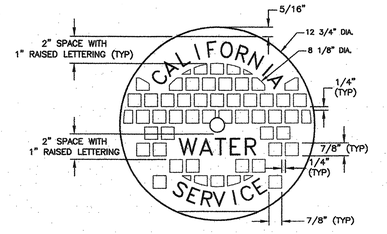


COVER "A"
(FOR UNPAVED AREAS)

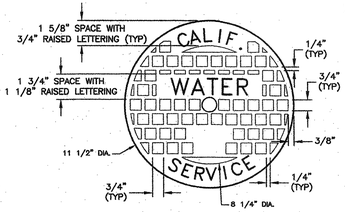
COVER "B"
(FOR PAVED AREAS)

FRAME DETAIL FOR COVER "B"
(IN PAVED AREAS)

TYPICAL CENTER SECTION OF FRAME RISER
(FOR PAVED AREAS)



TOP VIEW OF COVER "A"



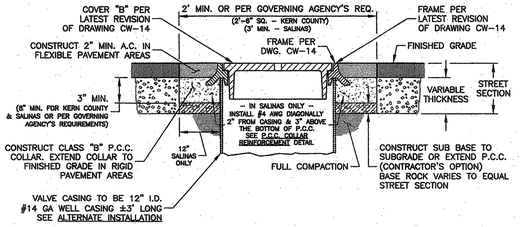
TOP VIEW OF COVER "B"

NOTE:
LETTERING AND DETAILS SHALL BE RAISED 1/8" ABOVE FACE OF COVER "A" AND "B".

NOTES:

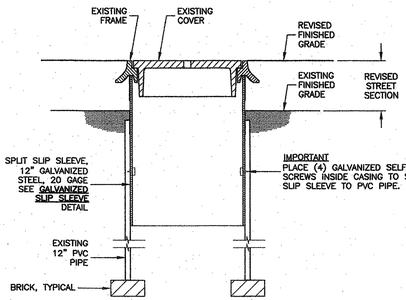
1. Frame, cover and casing extensions to be of good quality domestic cast iron, free from flaws and blow holes, and of sufficient strength to resist breakage by street traffic.
2. Castings to be true, and if necessary to be trimmed on emery wheel to prevent rocking of cover in any position in the frame.
3. See latest revision of drawing CW–439 for valve cover, casing, and frame installation details.
4. Cover "A" does not have a matching cast frame.

CW 14R6 — VALVE COVER AND FRAME FABRICATION DETAILS FOR PAVED AND UNPAVED AREAS

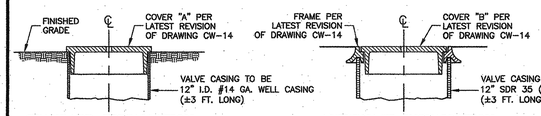


STANDARD PAVED AREA INSTALLATION
N.T.S.

NOTE:
TO EXTEND AN EXISTING STANDARD PAVED INSTALLATION: REMOVE FRAME, ADD STANDARD CAST FRAME RISER PER LATEST REVISION OF DRAWING CW–14, OR TACK WELD ADDITIONAL STEEL CASING AS REQUIRED, REPLACE FRAME.



EXISTING PAVED AREA PVC CASING AND SLIP SLEEVE EXTENSION
N.T.S.

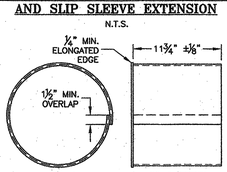


STANDARD INSTALLATION
(IN UNPAVED AREAS)

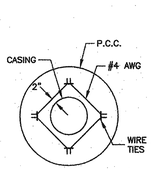
NOTE:
TO EXTEND AN EXISTING STANDARD UNPAVED INSTALLATION: REMOVE COVER, TACK WELD ADDITIONAL STEEL CASING AS REQUIRED, AND REPLACE COVER.

ALTERNATE INSTALLATION
(IN PAVED AREAS)

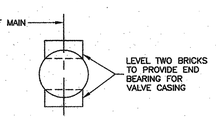
NOTE:
TO EXTEND PVC CASING IN PAVED AREA: SEE EXISTING PAVED AREA PVC CASING AND SLIP SLEEVE EXTENSION DETAIL.



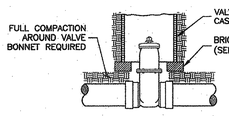
GALVANIZED SLIP SLEEVE
N.T.S.



P.C.C. COLLAR REINFORCEMENT
(SALINAS ONLY)
N.T.S.



VALVE CASING FOOTING
TOP VIEW
N.T.S.



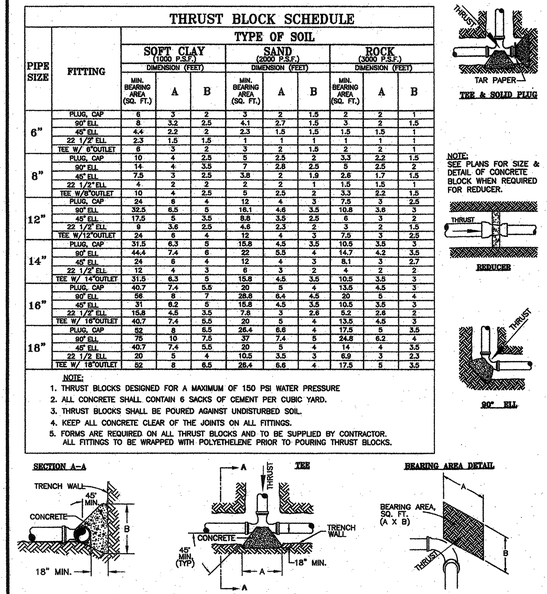
VALVE CASING FOOTING
SIDE VIEW
N.T.S.

CW 439R6 — VALVE CASING, COVER, AND FRAME INSTALLATION DETAILS

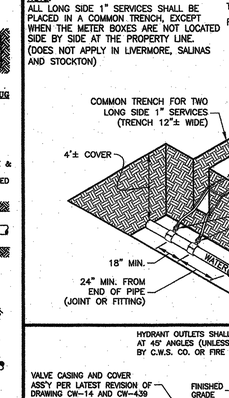
THRUST BLOCK SCHEDULE

PIPE SIZE	FITTING	SOFT CLAY (1000 P.S.F.) MIN. BEARING AREA (SQ. FT.)	SOFT CLAY DIMENSION (FEET) A	SOFT CLAY DIMENSION (FEET) B	SAND (2000 P.S.F.) MIN. BEARING AREA (SQ. FT.)	SAND DIMENSION (FEET) A	SAND DIMENSION (FEET) B	ROCK (3000 P.S.F.) MIN. BEARING AREA (SQ. FT.)	ROCK DIMENSION (FEET) A	ROCK DIMENSION (FEET) B
6"	PLUG, CAP	6	3	2	3	2	1.5	2	2	1
	90° ELL	8	3.2	2.5	4.1	2.7	1.5	3	2	1.5
	45° ELL	4.4	2.2	2	2.3	1.5	1.5	1.5	1.5	1
	22 1/2° ELL	2.3	1.5	1.5	1	1	1	1	1	1
	TEE W/ 6"OUTLET	6	3	2	3	2	1.5	2	2	1
8"	PLUG, CAP	10	4	2.5	5	2.5	2	3.3	2.2	1.5
	90° ELL	14	4	3.5	7	2.8	2.5	5	2.5	2
	45° ELL	7.5	3	2.5	3.8	2	1.9	2.8	1.7	1.5
	22 1/2° ELL	4	2	2	2	2	1	1.5	1.5	1
	TEE, W/8"OUTLET	10	4	2.5	5	2.5	2	3.3	2.2	1.5
12"	PLUG, CAP	24	6	4	12	4	3	7.5	3	2.5
	90° ELL	32.5	6.5	5	16.1	4.6	3.5	10.8	3.6	3
	45° ELL	17.5	5	3.5	8.8	3.5	2.5	6	3	2
	22 1/2° ELL	8	3.6	2.5	4.6	2.3	2	3	2	1.5
	TEE, W/12"OUTLET	24	6	4	12	4	3	7.5	3	2.5
14"	PLUG, CAP	31.5	6.3	5	15.8	4.5	3.5	10.5	3.5	3
	90° ELL	44.4	7.4	6	22	5.5	4	14.7	4.2	3.5
	45° ELL	24	6	4	12	4	3	8.1	3	2.7
	22 1/2° ELL	12	4	3	6	3	2	4	2	2
	TEE, W/ 14"OUTLET	31.5	6.3	5	15.8	4.5	3.5	10.5	3.5	3
16"	PLUG, CAP	40.7	7.4	5.5	20	5	4	13.5	4.5	3
	90° ELL	56	8	7	28.8	6.4	4.5	20	5	4
	45° ELL	31	6.2	5	15.8	4.5	3.5	10.5	3.5	3
	22 1/2° ELL	15.8	4.5	3.5	7.8	3	2.6	5.2	2.6	2
	TEE, W/ 16"OUTLET	40.7	7.4	5.5	20	5	4	13.5	4.5	3
18"	PLUG, CAP	52	8	6.5	26.4	6.6	4	17.5	5	3.5
	90° ELL	75	10	7.5	37	7.4	5	24.8	6.2	4
	45° ELL	40.7	7.4	5.5	20	5	4	14	4	3.5
	22 1/2° ELL	20	5	4	10.3	3.5	3	6.9	3	2.3
	TEE, W/ 18"OUTLET	52	8	6.5	26.4	6.6	4	17.5	5	3.5

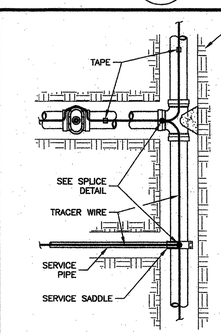
NOTE:
1. THRUST BLOCKS DESIGNED FOR A MAXIMUM OF 150 PSI WATER PRESSURE
2. ALL CONCRETE SHALL CONTAIN 6 SACKS OF CEMENT PER CUBIC YARD.
3. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
4. KEEP ALL CONCRETE CLEAR OF THE JOINTS ON ALL FITTINGS.
5. FORMS ARE REQUIRED ON ALL THRUST BLOCKS AND TO BE SUPPLIED BY CONTRACTOR. ALL FITTINGS TO BE WRAPPED WITH POLYETHELENE PRIOR TO POURING THRUST BLOCKS.



CW 435R4 — TYPICAL THRUST BLOCK INSTALLATION



NOTE:
SEE PLANS FOR SIZE & DETAIL OF CONCRETE BLOCK WHEN REQUIRED FOR REDUCER.



PLAN VIEW

STEPS:

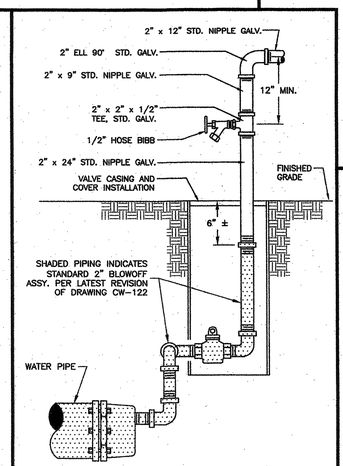
1. STRIP 1" OF INSULATION FROM END OF EACH WIRE.
2. TWIST WIRES TOGETHER WITH PLIERS.
3. PLACE SPLICE CAP OVER TWISTED WIRES AND CRIMP WITH CRIMPING TOOL.
4. BEND CRIMP FLAT WITH WIRE.
5. WRAP SPLICED CONNECTION WITH RUBBER MOLDING TAPE, COMPLETELY COVERING BARE WIRE.

–OR–

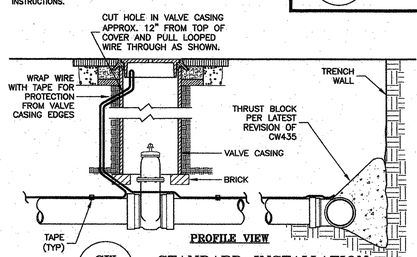
USE WATERTIGHT DIRECT BURY TWIST–ON ENCLOSURES OR APPROVED EQUAL AND INSTALL PER MANUFACTURER'S INSTRUCTIONS.



SPLICE DETAIL FOR CUT WIRES



CW 638R1 — SAMPLING DEVICE FOR 2" BLOW–OFF

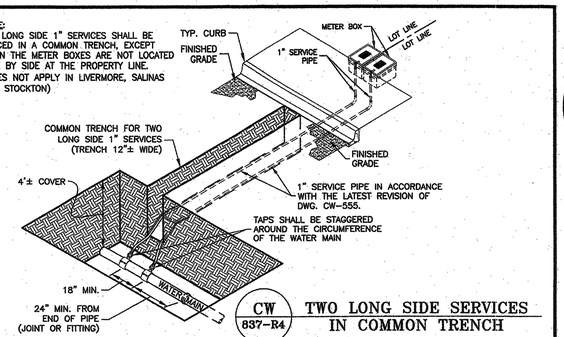


NOTES:

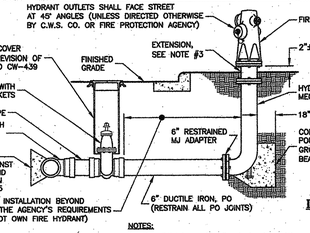
1. CONTRACTOR SHALL USE CARE TO PREVENT DAMAGE TO TRACER WIRE DURING INSTALLATION.
2. ALL WIRE SHALL BE SOLID COPPER WITH 45 MILS OF HIGH MOLECULAR WEIGHT POLYETHYLENE (HMWPE) INSULATION, UL LISTED, RATED FOR DIRECT BURIAL. MINIMUM SIZE AWG 12. COLOR BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER.
3. TRACER WIRES SHALL BE INTER–CONNECTED AT TEES, CROSSES, PE SERVICES, AND CUT WIRES WITH SPLICE CONNECTORS.
4. ENOUGH SLACK OF TRACER WIRE SHALL BE EXTENDED INTO VALVE CASING AND METER BOX FOR FUTURE ACCESS. LOOPED WIRE SHALL BE PULLED INTO VALVE CASING AS SHOWN ON "PROFILE VIEW" ABOVE. TRACER WIRE SHALL BE TAPED TO BLOW OFF ASSEMBLY AT DEAD ENDS AND TO ANGLE METER STOP AT END OF SERVICE CONNECTIONS.
5. CONTINUITY TESTS SHALL BE CONDUCTED WHEN REQUIRED BY A CAL WATER REPRESENTATIVE.
6. TRACER WIRE SHALL BE REQUIRED ON ALL MAINS.

CW 850R4 — STANDARD INSTALLATION DETAILS FOR TRACER WIRES

NOTE:
ALL LONG SIDE 1" SERVICES SHALL BE PLACED IN A COMMON TRENCH, EXCEPT WHEN THE METER BOXES ARE NOT LOCATED SIDE BY SIDE AT THE PROPERTY LINE. (DOES NOT APPLY IN LIVERMORE, SALINAS AND STOCKTON)

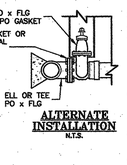


CW 837–R4 — TWO LONG SIDE SERVICES IN COMMON TRENCH



NOTE: IN STOCKTON, INSTALLATION BEYOND TEE SHALL BE PER THE AGENCY'S REQUIREMENTS (C.W.S. CO. DOES NOT OWN FIRE HYDRANT)

STANDARD INSTALLATION
N.T.S.

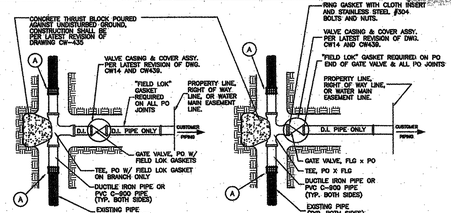


ALTERNATE INSTALLATION
N.T.S.

NOTES:

1. For district specific fire hydrant models and requirements, see District fire hydrant form, note 18 on main extension drawing, or verify with C.W.S. Co. representative.
2. All fire hydrant materials shall comply with latest C.W.S. Co. material specifications.
3. A hydrant extension may be required to adjust for finished grade.
4. For wet barrel hydrants this dimension is from finished grade to bury's flange or extension's flange when an extension is required.
5. Push–on, flanged fitting joints, and/or threaded–flanged risers may be required in certain fire protection districts. Verify with C.W.S. Co. representative all fire hydrant material prior to the installation. (In Stockton verify with the fire protection agency that has jurisdiction.)
6. Fire hydrant barricades shall be required when a vertical or rolled curb does not exist, or when the fire hydrant needs to be protected from moving vehicles, per latest revision of drawing CW–822.
7. All machine bolts and nuts shall be 304 stainless steel, except for break–off bolts.
8. A 90° elbow with restrained push on joints may be required for the fire hydrant installation when space is limited and the hydrant lead must run parallel to the main or the location of the fire hydrant requires the bend.
9. Protect all underground bolts and nuts per C.W.S. Co. standard coating specification.
10. A break–off check valve may be required in sloped terrain as specified by district personnel. Use Clow Model LB400 or approved equal.

CW 380R16 — TYPICAL FIRE HYDRANT INSTALLATION



STANDARD INSTALLATION

TYPICAL MATERIALS FOR ____ INCH FIRE SERVICE:

1 – ____" x ____" TEE PO CL 53
1 – ____" GATE VALVE PO MSS NO RS
1 – VALVE CASING AND COVER ASSEMBLY
____ – FEET OF ____" DUCTILE IRON PIPE (FOR FIRE SERVICE RUN)
____ – 20" POLYWRAP TUBING 8 MIL W/PVC TAPE
____ – ____" "FIELD LOK" GASKET F/PO
____ – FEET OF ____" DUCTILE IRON PIPE OR PVC C–900 PIPE (FOR TEE RUN)

ALTERNATE INSTALLATION

TYPICAL MATERIALS FOR ____ INCH FIRE SERVICE:

1 – ____" x ____" TEE PO X FLG CL 53
1 – ____" GATE VALVE FLG X PO MSS NO RS
1 – VALVE CASING AND COVER ASSEMBLY.
____ – FEET OF ____" DUCTILE IRON PIPE (FOR FIRE SERVICE RUN)
1 – GAL. METAL GUARD #301
1 – ROLL BIT OR RES WRAP
____ – 20" POLYWRAP TUBING 8 MIL W/PVC TAPE
____ – ____" "FIELD LOK" GASKET F/PO
____ – FEET OF PVC C–900 PIPE OR DUCTILE IRON PIPE (FOR TEE RUN)

NOTES:

1. A DOUBLE CHECK VALVE OR REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY IS REQUIRED.
2. POLYETHYLENE ENCASEMENT WITH PVC TAPE IS REQUIRED FOR ALL DUCTILE IRON PIPE AND ALL FITTINGS.
3. PROTECT ALL UNDERGROUND BOLTS, NUTS, FLEX. COUPLINGS, AND BARE STEEL PER C.W.S. CO. PROTECTION COATING SPECIFICATIONS.
4. BLOCK AND POUR CONCRETE THRUST BLOCKS ON ALL ELLS, TEES, AND CAPS, PER LATEST REVISION OF DRAWING CW–435.
5. THE USE OF "FIELD LOK" GASKETS DOES NOT ELIMINATE THE NEED FOR CONCRETE THRUST BLOCKS.

FLANGE MATERIAL – CHECK ONE BOX

☐ 1 – 4" FLANGE TYTE GASKET
8 – 5/8" ø x 3" 304 SS MACHINE BOLTS W/ HN

☐ 1 – 6" FLANGE TYTE GASKET
8 – 3/4" ø x 3–1/2" 304 SS MACHINE BOLTS W/ HN

☐ 1 – 8" FLANGE TYTE GASKET
8 – 3/4" ø x 3–1/2" 304 SS MACHINE BOLTS W/ HN

☐ 1 – 10" FLANGE TYTE GASKET
12 – 7/8" ø x 4" 304 SS MACHINE BOLTS W/ HN

MATERIAL FOR ITEM (A)	(EITHER INSTALLATION)
TIE–INS FROM D.I. TO D.I. OR PVC C–900 OR ACMP (CMP) USE SOLID SLEEVE MJ TIE–INS FROM D.I. TO C–900 USE SOLID SLEEVE MJ EQUAL PURPOSE	TIE–INS FROM D.I. TO STD. STEEL USE OD STEEL x D.I. FLEX. COUPLING (10" SLV IF STL OR STD SLV IF D.I.)
TIE–INS FROM D.I. TO ACMP (ASBESTOS CEMENT ROUGH BARREL) USE ACMP x D.I. FLEX. COUPLING (10" SLEEVE IF STEEL OR STANDARD SLEEVE IF DUCTILE IRON).	TIE–INS FROM D.I. TO STD. STEEL USE STD X D.I. FLEX. COUPLING (10" SLV IF STL OR STD SLV IF D.I.) TIE–INS FROM PVC C–900 TO PVC C–900 USE "CERTAINTEED" PVC CLOSURE COUPLING

CW 840R4 — STANDARD PRIVATE FIRE SERVICE CONNECTION

ENGINEERING

CALIFORNIA WATER SERVICE

DEPARTMENT

REVISIONS:

	DATE:	INIT.
DISTRIBUTION MAP		
PLAT SHEET		
SYSTEM SCHEMATIC		
STATION SCHEMATIC		

PLAT SHEET NO.:

SCALE: N.T.S.

DRAWN BY: M. FONG

DESIGNED BY:

CHECKED BY: DATE:

APPROVED BY: DATE:

APPROVED
STATE ARCHITECT
DIV. OF THE STATE ARCHITECT
LOS ANGELES REGIONAL OFFICE
SS 7/11 FLS AC
DATE JUL 18 2016

TITLE:
CALIFORNIA WATER SERVICE COMPANY
STANDARD DRAWINGS

DISTRICT: ALL

DATE: 5/12/2016

PROJECT ID.:

DRAWING NO.: CWDWGS

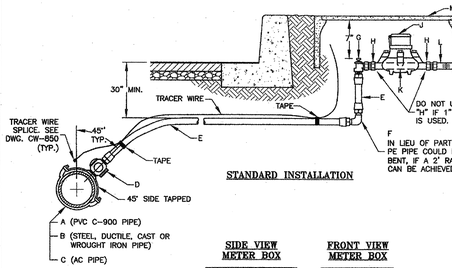
SHT 1 OF 2

NOTES:
1. ALL PE PLASTIC PIPE REQUIRES TRACER WIRE TAPED TO PE PIPE AND EXTENDED INTO METER BOX PER LATEST REVISION OF DWG. CW-850 AND AS SPECIFIED IN CWS CO. MATERIAL SPECIFICATIONS DWG. CW-832.
2. SADDLES ARE REQUIRED ON ALL PVC C-900, AC, STEEL, OR WROUGHT IRON PIPE.
3. INSERT STIFFNERS SHALL BE USED ON ALL PE PIPE WITH COMPRESSION CONNECTIONS.
4. WHEN USING MUELLER INSTA-TITE, BEVEL THE PE PIPE WITH MUELLER'S BEVELING TOOL PER MANUFACTURER'S SPECIFICATIONS.
5. RESPONSIBILITY FOR SERVICE MAINTENANCE BY CWS CO. ENDS AT DOWNSTREAM METER COUPLING (OR LEFT TO DISTRICT'S DISCRETION).
6. ALL PIPE FITTINGS IN CONTACT WITH WATER SHALL BE LEAD FREE (< 0.25% LEAD) AND COMPLIANT TO NSF-61/SECTION 8.

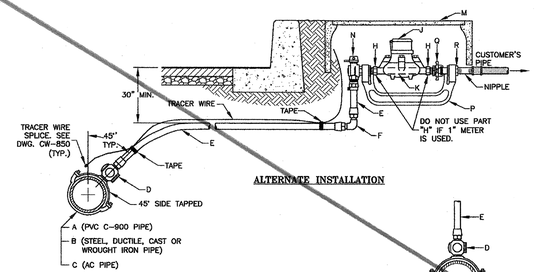
OPTIONS: THESE OPTIONS MAY BE REQUIRED BY CWS CO.

1. EXTEND CUSTOMER'S PIPING ±12" BEYOND METER BOX WITH TWO 12" NIPPLES & TWO 90° ELLS, BRASS (OR GALVANIZED IF PREFERRED BY CWS). SEE NOTE 5.
2. INSTALL BALL VALVE DOWNSTREAM FROM METER WHEN CUSTOMER'S PIPING IS UPHILL FROM METER OR CUSTOMER'S VALVE IS A GREAT DISTANCE FROM METER.
3. INSTALL 1" COPPER TUBING, TYPE K SOFT, INSTEAD OF PE WHEN CWS REPRESENTATIVE DETERMINES THAT CONDITIONS ARE UNFAVORABLE TO PE.

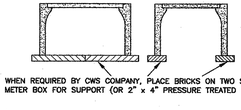
PART LETTER	PART NAME	PART SIZE	MUELLER INSTA-TITE/ MUELLER PACK-JOINT	FORD ULTRA-TITE/ FORD PACK JOINT	A.Y. McDONALD	CAMBRIDGE BRASS	SMITH-BLAIR	APAC
A	SERVICE SADDLE ALL BRONZE	NOMINAL MAIN SIZE x 1" CC	H-13400 SERIES	S90 SERIES	3805 SERIES	800 SERIES	393 SERIES	------
B	SERVICE SADDLE DUCTILE IRON	NOMINAL MAIN SIZE x 1" CC	DR 2A SERIES	F202 SERIES	------	------	313 SERIES	102 SERIES
C	SERVICE SADDLE ALL BRONZE	NOMINAL MAIN SIZE x 1" CC	BR 2B SERIES	202B SERIES	3825 SERIES	810 SERIES	323 SERIES	------
D	CORPORATION STOP (BALL)	1" CC x 1" MFG. F/PIPE IPS	B-2996N + H15456N	FB1001-4-U-ANWT-NL /FB1001-4-NL	747018-33 1"	301NL-A4PE4	------	------
E	1" PE PLASTIC PIPE	1" PE PLASTIC PIPE IPS	HIGH DENSITY POLYETHYLENE PIPE, IRON PIPE SIZE, AWWA STANDARD C901, PE 4710, PC 200, SIDR7					------
F	1" 90° ELBOW	1" MFG F/PE IPS	H-15464N	L66-44-U-NL/ L66-44-NL	74761-3Q 1"	105NL-PE4PE4	------	------
G	ANGLE METER STOP (BALL)	1" F/PE IPS x 1" METER SWIVEL NUT	B-24268N/E-24259N	BA63-444W-U-AWT-NL /BA63-444W-NL	746028-33 1"	210NL-PE4T4	------	------
H	METER ADAPTER	1" METER TO 5/8" x 3/4" METER	H-10879N	A24-NL	710J24	440NL-H4R2	------	------
J	METER	BY CWS COMPANY: 5/8" x 3/4" METER (USE FOR LOT SIZE 10,000 SQ. FT. OR LARGER OF IF REQ'D TO MEET CITY'S FIRE SPRINKLER ORDINANCE) LENGTH 10" 1" METER (USE FOR LOT SIZE 10,000 SQ. FT. OR LARGER OF IF REQ'D TO MEET CITY'S FIRE SPRINKLER ORDINANCE) LENGTH 10"						
K	METER SPACER	DEVELOPER'S CONTRACTOR SHALL INSTALL SCH. 80 PVC NIPPLE IN PLACE OF METER: 1-1/4" DIAMETER, 11" LONG WITH PIT					------	------
L	METER COUPLING	1" METER SWIVEL NUT x M.I.P.	H-10899N	C38-44-2-625-NL	74624	417NL-T4M4	------	------
M	METER BOX - BROOKS #37 BOX W/ CAST IRON COVER OR CHRISTY #B12 BOX W/ CAST IRON COVER. IF OUTSIDE FULL TRAFFIC AREAS, USE CHRISTY FL12 BOX W/ SYN12S LID. CWS OPTION: 1-PIECE COVER FL12D OR ARMORCAST P6000485-ROTOCAST BOX W/ A60004840Q COVER & TRUCP-IN LID A6000487. CWS OPTION: 1-PIECE COVER A6000484	12" x 20" x 12"	------	------	------	------	------	------
N	ANGLE BALL VALVE	1" PEP x 1" LOCKNUT	H-15428N+B-24378N/ E-15429N+B-24278N	BA96-444W-U-AWT-NL /BA96-444W-NL	------	------	------	------
P	IRON YOKE PIECE	------	H-5040	Y504P	------	------	------	------
Q	EXPANSION CONNECTION	------	H-14234N	EC-4-NL	------	------	------	------
R	YOKE COUPLING	LOCKNUT x FIP	H-14219N	C91-44-NL	------	------	------	------



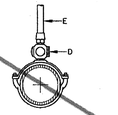
STANDARD INSTALLATION



ALTERNATE INSTALLATION



WHEN REQUIRED BY CWS COMPANY, PLACE BRICKS ON TWO SIDES OF METER BOX FOR SUPPORT (OR 2" x 4" PRESSURE TREATED LUMBER)



TAPPED AT TOP OF MAIN
USE THIS INSTALLATION ONLY WHEN METER BOX IS LOCATED DIRECTLY ABOVE THE MAIN

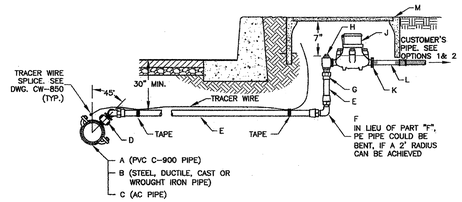
CW 555R15 — STANDARD 1" SERVICE CONNECTION FOR 5/8" X 3/4" METER AND 1" METER

NOTES:
1. 2" SERVICE SHALL BE INSTALLED FOR ALL 1-1/2" METERS.
2. A SADDLE SHALL BE USED FOR ALL 2" SERVICES.
3. ALL PE PLASTIC PIPE REQUIRES TRACER WIRE TAPED TO PE PIPE AND EXTENDED INTO METER BOX PER LATEST REVISION OF DWG. CW-850 AND AS SPECIFIED IN CWS CO. MATERIAL SPECIFICATIONS DWG. CW-832.
4. INSERT STIFFNERS SHALL BE USED ON ALL PE PIPE WITH COMPRESSION CONNECTIONS.
5. RESPONSIBILITY FOR SERVICE MAINTENANCE BY CWS CO. ENDS AT DOWNSTREAM METER COUPLING (OR LEFT TO DISTRICT'S DISCRETION).
6. ALL PIPE FITTINGS IN CONTACT WITH DRINKING WATER SHALL BE LEAD FREE (< 0.25% LEAD) AND COMPLIANT TO NSF-61/SECTION 8.

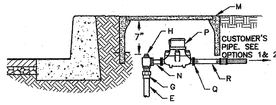
OPTIONS: THESE OPTIONS MAY BE REQUIRED BY CWS CO.

1. EXTEND CUSTOMER'S PIPING ±12" BEYOND METER BOX WITH TWO 12" NIPPLES & TWO 90° ELLS, BRASS (OR GALVANIZED IF PREFERRED BY CWS). SEE NOTE 5.
2. INSTALL BALL VALVE DOWNSTREAM FROM METER WHEN CUSTOMER'S PIPING IS UPHILL FROM METER OR CUSTOMER'S VALVE IS A GREAT DISTANCE FROM METER.
3. INSTALL 2" COPPER TUBING, TYPE K SOFT, INSTEAD OF PE WHEN CWS REPRESENTATIVE DETERMINES THAT CONDITIONS ARE UNFAVORABLE TO PE. REFER TO LATEST REVISION OF DWG# CW1020.
4. WHEN REQUIRED BY CWS COMPANY, PLACE BRICKS ON TWO SIDES OF METER BOX FOR SUPPORT (OR 2" x 4" PRESSURE TREATED LUMBER).

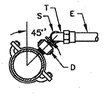
PART LETTER	PART NAME	MUELLER	FORD	A.Y. McDONALD	CAMBRIDGE BRASS	SMITH-BLAIR	APAC
A	SERVICE SADDLE, ALL BRASS WITH 2" AWWA CC THREAD	H-13400	S90 SERIES	3805 SERIES	800 SERIES	393 SERIES	------
B	SERVICE SADDLE, DUCTILE IRON BODY, DOUBLE STEEL STRAP WITH 2" AWWA CC THREAD	DR2A	F202 SERIES	4825A	------	313 SERIES	102 SERIES
C	SERVICE SADDLE, BRASS BODY, DOUBLE BRONZE STRAP WITH 2" AWWA CC THREAD	BR2B	202B SERIES	3825 SERIES	810 SERIES	323 SERIES	------
D	2" CORPORATION STOP - AWWA CC THREAD X MIP	B-2996N	FB400-7-NL	73128B	301NL-A7M7	------	------
E	2" HDPE PIPE	HIGH DENSITY POLYETHYLENE PIPE, IRON PIPE SIZE, AWWA STANDARD C901, PE 4710, PC 200, SIDR7					
F	2" 90° ELL COUPLING - PEP X PEP	------	L66-77-IDR7-NL	74761-33	105NL-PE7PE7	------	------
G	2" STRAIGHT COUPLING - PEP X MIP	E-15429N	C86-77-IDR7-NL	74753-33	117NL-PE7M7	------	------
H	2" BALL ANGLE METER VALVE - F.I.P. X METER FLANGE	B-24286N-3	BFA13-777WR-NL	74604B	210NL-F7MF7	------	------
J	2" METER, (BY CWS COMPANY) LENGTH 17" NOTE: DEVELOPER'S CONTRACTOR SHALL INSTALL SPACER IN PLACE OF METER PER CWS CO'S DIRECTION	------	------	------	------	------	------
K	2" METER FLANGE - FLG. X F.I.P; BRONZE WITH FULL FACE GASKET AND #304 STAINLESS STEEL BOLTS & NUTS	------	CF31-77-NL	7610F	421NL-7S/S	------	------
L	2" NIPPLE - LEAD FREE BRASS	------	------	------	------	------	------
M	17" X 28" METER BOX-BROOKS CONCRETE #65 BOX W/ #60S CONCRETE COVER & LID OR CHRISTY CONCRETE B65 BOX W/ B65E CONCRETE COVER & LID NOTE: CAST IRON COVERS REQUIRED IN TRAFFIC AREAS	------	------	------	------	------	------
N	ADAPTER - 2" METER FLG. X 1-1/2" MET FLG.	------	A87-NL	710J67	------	------	------
P	1-1/2" METER, (BY CWS COMPANY) LENGTH 13" NOTE: DEVELOPER'S CONTRACTOR SHALL INSTALL SPACER IN PLACE OF METER PER CWS CO'S DIRECTION	------	------	------	------	------	------
Q	1-1/2" METER FLANGE - FLG. X F.I.P.; BRONZE WITH FULL FACE GASKET AND #304 STAINLESS STEEL BOLTS & NUTS	------	CF31-66-NL	7610F	421NL-6S/S	------	------
R	1-1/2" NIPPLE - LEAD FREE BRASS	------	------	------	------	------	------
S	2" 90° ELL, LEAD FREE BRASS - FIP X FIP	------	------	------	------	------	------
T	2" 90° ELL COUPLING - MIP X PEP	------	L86-77-IDR7-NL	74779M-33	105NL-B7M7	------	------



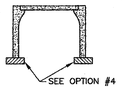
2" SERVICE WITH 2" METER

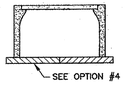


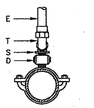
2" SERVICE WITH 1-1/2" METER



45° SIDE TAPPED CONNECTION





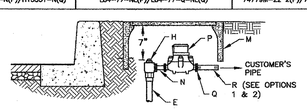


TAPPED AT TOP OF MAIN
USE THIS INSTALLATION ONLY FOR SERVICES LOCATED DIRECTLY ABOVE THE MAIN

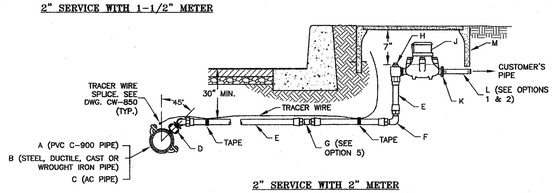
CW 436R9 — STANDARD 2" SERVICE CONNECTION FOR 2" METER OR 1-1/2" METER [POLYETHYLENE INSTALLATION]

PART LETTER	PART NAME	MUELLER	FORD	A.Y. McDONALD	CAMBRIDGE BRASS	SMITH-BLAIR	APAC
A	SERVICE SADDLE	H-13400	S90 SERIES	3805 SERIES	800 SERIES	393 SERIES	------
B	SERVICE SADDLE	DR2A	F202 SERIES	4825A	------	313 SERIES	102 SERIES
C	SERVICE SADDLE	BR2B	202B SERIES	3825 SERIES	810 SERIES	323 SERIES	------
D	2" CORPORATION STOP - AWWA TAPER THREAD INLET X MIP	B-2996N	FB800-7-NL	73128B	301NL-A7M7	------	------
E	2" COPPER	TYPE K SOFT PER LATEST REVISION OF ASTM SPECIFICATION B88					
F	2" 90° ELL COUPLING - CTS X CTS	P15526-N(P)/H15526-N(Q)	L44-77-NL(P)/L44-77-Q-NL(Q)	74761-22(P)/74761Q-2(Q)	105NL-B7B7(P)/105NL-H7H7(Q)	------	------
G	2" STRAIGHT COUPLING - CTS X CTS (SEE OPTION 5)	P15403-N(P)/H15403-N(Q)	C44-77-NL(P)/C44-77-Q-NL(Q)	74758-22(P)/74758Q-2(Q)	118NL-B7B7(P)/118NL-H7H7(Q)	------	------
H	2" BALL ANGLE METER VALVE - CTS X METER FLANGE - FULL PORT	P24276-N(P)/B24276-N(Q)	BFA13-777W-NL(P)/BFA43-777W-Q-NL(Q)	74602B-22(P)/74602BQ-2(Q)	210NL-B7M7(P)/210NL-H7M7(Q)	------	------
J	2" METER	------	------	------	------	------	------
K	2" METER FLANGE - FLG. X F.I.P; BRONZE WITH FULL FACE GASKET AND #304 STAINLESS STEEL BOLTS & NUTS	------	CF31-77-NL	7610F	421NL-7S/S	------	------
L	2" NIPPLE	------	------	------	------	------	------
M	METER BOX - BROOKS CONCRETE #65 BOX W/ #65S CONCRETE COVER & LID OR CHRISTY CONCRETE B65 BOX W/ B65E CONCRETE COVER & LID NOTE: CAST IRON COVERS REQUIRED IN TRAFFIC AREAS	------	------	------	------	------	------
N	ADAPTER - 2" METER FLG. X 1-1/2" MET FLG.	------	A87-NL	710J67	------	------	------
P	1-1/2" METER	------	------	------	------	------	------
Q	1-1/2" METER FLANGE - FLG. X F.I.P.; BRONZE WITH FULL FACE GASKET AND #304 STAINLESS STEEL BOLTS & NUTS	------	CF31-66-NL	7610F	421NL-6S/S	------	------
R	1-1/2" NIPPLE STD. LEAD-FREE BRASS	------	------	------	------	------	------
S	2" 90° ELL, FIP X FIP	------	------	------	------	------	------
T	2" 90° ELL - MIP X CTS	P15531-N(P)/H15531-N(Q)	L84-77-NL(P)/L84-77-Q-NL(Q)	74779M-22 2(P)/74779MQ-2(Q)	105NL-B7M7(P)/105NL-H7H7(Q)	------	------

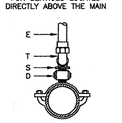
NOTE: P- PACK JOINT; Q- QUICK JOINT



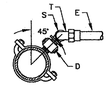
2" SERVICE WITH 1-1/2" METER



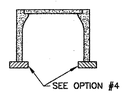
2" SERVICE WITH 2" METER

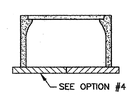


TAPPED AT TOP OF MAIN
USE THIS INSTALLATION ONLY FOR SERVICES LOCATED DIRECTLY ABOVE THE MAIN



45° SIDE TAPPED CONNECTION



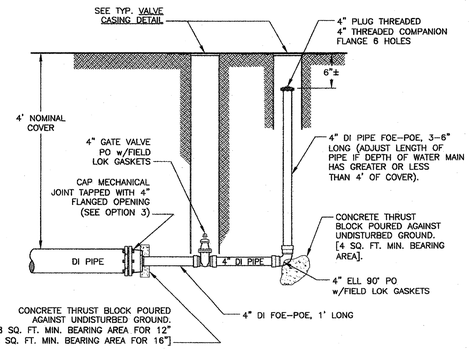


CW 1020 — STANDARD 2" SERVICE CONNECTION FOR 2" OR 1- 1/2" METER [COPPER INSTALLATION]

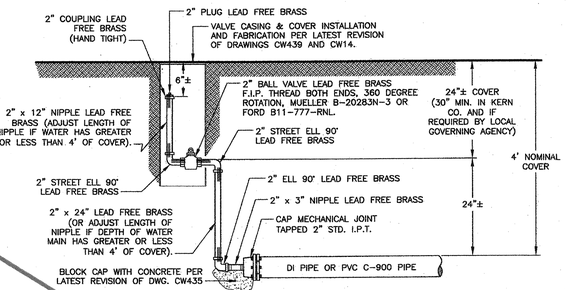
NOTES:
1. 2" SERVICE SHALL BE INSTALLED FOR ALL 1-1/2" METERS.
2. A SADDLE SHALL BE USED FOR ALL 2" SERVICES.
3. RESPONSIBILITY FOR SERVICE MAINTENANCE BY CWS CO. ENDS AT DOWNSTREAM METER COUPLING (OR LEFT TO DISTRICT'S DISCRETION).
4. ALL PIPE FITTINGS IN CONTACT WITH DRINKING WATER SHALL BE LEAD FREE (< 0.25% LEAD) AND COMPLIANT TO NSF-61/SECTION 8.

OPTIONS: THESE OPTIONS MAY BE REQUIRED BY CWS CO. AT THEIR DISCRETION.

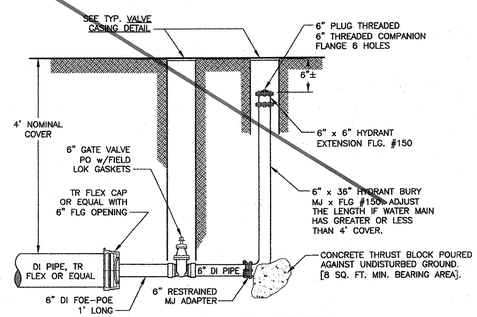
1. FOR 2" BLOW OFFS LOCATED OUTSIDE TRAVELED WAYS OR WHERE STREET RECONSTRUCTION IS NOT A CONCERN, THE BALL VALVE MAY BE PLACED CLOSER TO FINISHED GRADE (+/-12") WITH SHORTER OR NO PERMANENT RISER. SWING JOINT (ONE STREET ELL) MAY BE ADDED AS AN OFFSET TO PROPERLY LOCATE THE BALL VALVE.
2. IN LIEU OF NOTCHING VALVE CASING FOR 2" PIPE, CASING MAY BE SET ON BRICKS OR PRESSURE TREATED LUMBER SO CASING IS JUST ABOVE 2" PIPE.
3. IN LIEU OF CAP WITH FLANGED OPENING FOR 12" PIPE, 12" x 4" REDUCER PO WITH FIELD LOK GASKETS MAY BE USED.



4" BLOW-OFF ASSEMBLY FOR 12" TO 16" PIPE
N.T.S.



2" BLOW-OFF ASSEMBLY FOR 8" AND SMALLER PIPE
N.T.S.



6" BLOW-OFF ASSEMBLY FOR 18" AND LARGER PIPE
N.T.S.

CW 122R5 — STANDARD BLOW OFF ASSEMBLY

ENGINEERING

CALIFORNIA WATER SERVICE

DEPARTMENT

REVISIONS:

	DATE:	INIT.
REFERENCE/KEY MAP		
PLAT SHEET		
SYSTEM SCHEMATIC		
STATION SCHEMATIC		

PLAT SHEET NO.:

SCALE: N.T.S.

DRAWN BY: M. FONG

DESIGNED BY:

CHECKED BY: DATE:

APPROVED BY: DATE: 5/12/16

TITLE: CALIFORNIA WATER SERVICE COMPANY STANDARD DRAWINGS

DISTRICT: ALL

DATE: 5/12/2016

PROJECT ID.:

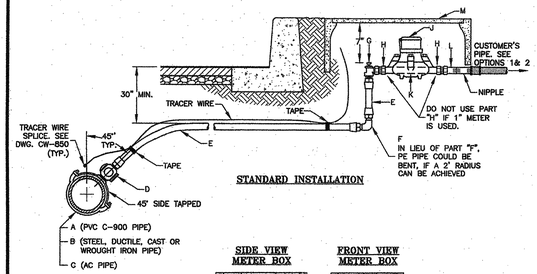
DRAWING NO.: CWDWGS

SHT 2 OF 2

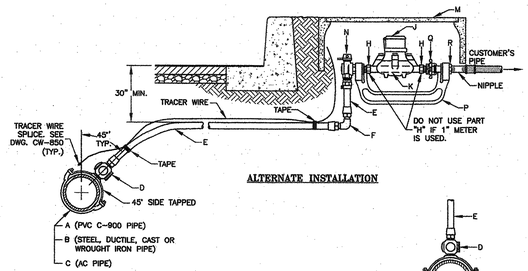
NOTES:
1. ALL PE PLASTIC PIPE REQUIRES TRACER WIRE TAPED TO PE PIPE AND EXTENDED INTO METER BOX PER LATEST REVISION OF DWG. CW-850 AND AS SPECIFIED IN CWS CO. MATERIAL SPECIFICATIONS DWG. CW-832.
2. SADDLES ARE REQUIRED ON ALL PVC C-900, AC, STEEL, OR WROUGHT IRON PIPE.
3. INSERT STIFFNERS SHALL BE USED ON ALL PE PIPE WITH COMPRESSION CONNECTIONS.
4. WHEN USING MUELLER INSTA-TITE, BEVEL THE PE PIPE WITH MUELLER'S BEVELING TOOL PER MANUFACTURER'S SPECIFICATIONS.
5. RESPONSIBILITY FOR SERVICE MAINTENANCE BY CWS CO. ENDS AT DOWNSTREAM METER COUPLING (OR LEFT TO DISTRICT'S DISCRETION).
6. ALL PIPE FITTINGS IN CONTACT WITH WATER SHALL BE LEAD FREE (< 0.25% LEAD) AND COMPLIANT TO NSF-61/SECTION 8.

OPTIONS: THESE OPTIONS MAY BE REQUIRED BY CWS CO.
1. EXTEND CUSTOMER'S PIPING ±12" BEYOND METER BOX WITH TWO 12" NIPPLES & TWO 90° ELLS, BRASS (OR GALVANIZED IF PREFERRED BY CWS). SEE NOTE 5.
2. INSTALL BALL VALVE DOWNSTREAM FROM METER WHEN CUSTOMER'S PIPING IS UPHILL FROM METER OR CUSTOMER'S VALVE IS A GREAT DISTANCE FROM METER.
3. INSTALL 1" COPPER TUBING, TYPE K SOFT, INSTEAD OF PE WHEN CWS REPRESENTATIVE DETERMINES THAT CONDITIONS ARE UNFAVORABLE TO PE.

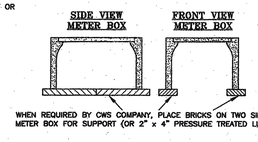
PART LETTER	PART NAME	PART SIZE	MUELLER INSTA-TITE/ MUELLER PACK-JOINT	FORD ULTRA-TITE/ FORD PACK JOINT	A.Y. McDONALD	CAMBRIDGE BRASS	SMITH-BLAIR	APAC
A	SERVICE SADDLE ALL BRONZE	NOMINAL MAIN SIZE x 1" CC	H-13400 SERIES	S90 SERIES	3805 SERIES	800 SERIES	393 SERIES	-------
B	SERVICE SADDLE DUCTILE IRON	NOMINAL MAIN SIZE x 1" CC	DR 2A SERIES	F202 SERIES	-------	-------	313 SERIES	102 SERIES
C	SERVICE SADDLE ALL BRONZE	NOMINAL MAIN SIZE x 1" CC	BR 2B SERIES	202B SERIES	3825 SERIES	810 SERIES	323 SERIES	-------
D	CORPORATION STOP (BALL)	1" CC x 1" MFG. F/PE IPS	B-2998N + H15456N	FB1001-4-U-ANWT-NL /FB1001-4-NL	747018-33 1"	301NL-A4PE4	-------	-------
E	1" PE PLASTIC PIPE	1" PE PLASTIC PIPE IPS	HIGH DENSITY POLYETHYLENE PIPE, IRON PIPE SIZE, AWWA STANDARD C901, PE 4710, PC 200, SIDR7					-------
F	1" 90° ELBOW	1" MFG F/PE IPS	H-15464N	L66-44-U-NL/ L66-44-NL	74761-3Q 1"	105NL-PE4PE4	-------	-------
G	ANGLE METER STOP (BALL)	1" F/PE IPS x 1" METER SWIVEL NUT	B-24286N/E-24259N	BA63-444W-U-WT-NL /BA63-444W-NL	74602B-33 1"	210NL-PE414	-------	-------
H	METER ADAPTER	1" METER TO 5/8" x 3/4" METER	H-10879N	A24-NL	710J24	440NL-M4R2	-------	-------
J	METER	5/8" CWS COMPANY: 5/8" x 3/4" METER (USE FOR LOT SIZE < 10,000 SQ. FT.) LENGTH 7 1/2". 1" METER (USE FOR LOT SIZE 10,000 SQ. FT. OR LARGER OR IF REQ'D TO MEET CITY'S FIRE SPRINKLER ORDINANCE) LENGTH 10"						
K	METER SPACER	DEVELOPER'S CONTRACTOR SHALL INSTALL SCH. 80 PVC NIPPLE IN PLACE OF METER: 1-1/4" DIAMETER, 11" LONG WITH PIT					-------	-------
L	METER COUPLING	1" METER SWIVEL NUT x M.I.P.	H-10890N	C38-44-2-625-NL	74624	417NL-T4M4	-------	-------
M	METER BOX – BROOKS #37 BOX W/ CAST IRON COVER OR CHRISTY #812 BOX W/ CAST IRON COVER. IF OUTSIDE FULL TRAFFIC AREAS, USE CHRISTY FL12 BOX W/ SYN12S LID. CWS OPTION: 1-PIECE COVER FL12D OR ARMORCAST P8000485–R0700487 BOX W/ A8000484DG COVER & DROP–IN LID A8000487. CWS OPTION: 1–PIECE COVER A8000484	12" x 20" x 12"	-------	-------	-------	-------	-------	-------
N	ANGLE BALL VALVE	1" PEP x 1" LOCKNUT	H-15428N+B-24378N/ C-15428N+B-24278N	BA86-444W-U-WT-NL /BA86-444W-NL	-------	-------	-------	-------
P	IRON YOKE PIECE	-------	H-5040	Y504P	-------	-------	-------	-------
Q	EXPANSION CONNECTION	-------	H-14234N	EC-4-NL	-------	-------	-------	-------
R	YOKE COUPLING	LOCKNUT x FIP	H-14219N	C91-44-NL	-------	-------	-------	-------



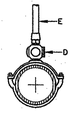
STANDARD INSTALLATION



ALTERNATE INSTALLATION



WHEN REQUIRED BY CWS COMPANY, PLACE BRICKS ON TWO SIDES OF METER BOX FOR SUPPORT (OR 2" x 4" PRESSURE TREATED LUMBER)



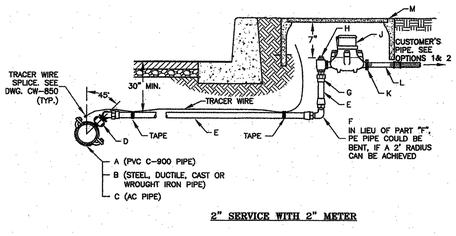
TAPPED AT TOP OF MAIN
USE THIS INSTALLATION ONLY WHEN METER BOX IS LOCATED DIRECTLY ABOVE THE MAIN

CW 555R15 — STANDARD 1" SERVICE CONNECTION FOR 5/8" X 3/4" METER AND 1" METER

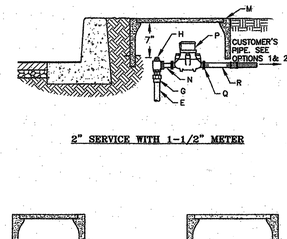
NOTES:
1. 2" SERVICE SHALL BE INSTALLED FOR ALL 1-1/2" METERS.
2. A SADDLE SHALL BE USED FOR ALL 2" SERVICES.
3. ALL PE PLASTIC PIPE REQUIRES TRACER WIRE TAPED TO PE PIPE AND EXTENDED INTO METER BOX PER LATEST REVISION OF DWG. CW-850 AND AS SPECIFIED IN CWS CO. MATERIAL SPECIFICATIONS DWG. CW-832.
4. INSERT STIFFNERS SHALL BE USED ON ALL PE PIPE WITH COMPRESSION CONNECTIONS.
5. RESPONSIBILITY FOR SERVICE MAINTENANCE BY CWS CO. ENDS AT DOWNSTREAM METER COUPLING (OR LEFT TO DISTRICT'S DISCRETION).
6. ALL PIPE FITTINGS IN CONTACT WITH DRINKING WATER SHALL BE LEAD FREE (< 0.25% LEAD) AND COMPLIANT TO NSF-61/SECTION 8.

OPTIONS: THESE OPTIONS MAY BE REQUIRED BY CWS CO.
1. EXTEND CUSTOMER'S PIPING ±12" BEYOND METER BOX WITH TWO 12" NIPPLES & TWO 90° ELLS, BRASS (OR GALVANIZED IF PREFERRED BY CWS). SEE NOTE 5.
2. INSTALL BALL VALVE DOWNSTREAM FROM METER WHEN CUSTOMER'S PIPING IS UPHILL FROM METER OR CUSTOMER'S VALVE IS A GREAT DISTANCE FROM METER.
3. INSTALL 2" COPPER TUBING, TYPE K SOFT, INSTEAD OF PE WHEN CWS REPRESENTATIVE DETERMINES THAT CONDITIONS ARE UNFAVORABLE TO PE. REFER TO LATEST REVISION OF DWG# CW1020.
4. WHEN REQUIRED BY CWS COMPANY, PLACE BRICKS ON TWO SIDES OF METER BOX FOR SUPPORT (OR 2" x 4" PRESSURE TREATED LUMBER).

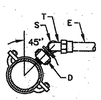
PART LETTER	PART NAME	MUELLER	FORD	A.Y. McDONALD	CAMBRIDGE BRASS	SMITH-BLAIR	APAC
A	SERVICE SADDLE, ALL BRASS WITH 2" AWWA CC THREAD	H-13400	S90 SERIES	3805 SERIES	800 SERIES	393 SERIES	-------
B	SERVICE SADDLE, DUCTILE IRON BODY, DOUBLE STEEL STRAP WITH 2" AWWA CC THREAD	DR2A	F202 SERIES	4825A	-------	313 SERIES	102 SERIES
C	SERVICE SADDLE, BRASS BODY, DOUBLE BRONZE STRAP WITH 2" AWWA CC THREAD	BR2B	202B SERIES	3825 SERIES	810 SERIES	323 SERIES	-------
D	2" CORPORATION STOP – AWWA CC THREAD X MIP	B-2998N	FB800-7-NL	7312BB	301NL-A7M7	-------	-------
E	2" HDPE PIPE	HIGH DENSITY POLYETHYLENE PIPE, IRON PIPE SIZE, AWWA STANDARD C901, PE 4710, PC 200, SIDR7					
F	2" 90° ELL COUPLING – PEP X PEP	-------	L66-77-IDR7-NL	74761-33	105NL-PE7PE7	-------	-------
G	2" STRAIGHT COUPLING – PEP X MIP	E-15429N	C86-77-IDR7-NL	74753-33	117NL-PE7M7	-------	-------
H	2" BALL ANGLE METER VALVE – F.I.P. X METER FLANGE	B-24286N-3	BFA13-777WR-NL	74604B	210NL-F7MF7	-------	-------
J	2" METER, (BY CWS COMPANY) LENGTH 17" NOTE: DEVELOPER'S CONTRACTOR SHALL INSTALL SPACER IN PLACE OF METER PER CWS CO'S DIRECTION	-------	-------	-------	-------	-------	-------
K	2" METER FLANGE – FLG. X F.I.P.; BRONZE WITH FULL FACE GASKET AND #304 STAINLESS STEEL BOLTS & NUTS	-------	CF31-77-NL	7610F	421NL-7S/S	-------	-------
L	2" NIPPLE – LEAD FREE BRASS	-------	-------	-------	-------	-------	-------
M	17" X 28" METER BOX–BROOKS CONCRETE #65 BOX W/ #65S CONCRETE COVER & LID OR CHRISTY CONCRETE B6S BOX W/ B6SE CONCRETE COVER & LID NOTE: CAST IRON COVERS REQUIRED IN TRAFFIC AREAS	-------	-------	-------	-------	-------	-------
N	ADAPTER – 2" METER FLG. X 1-1/2" MET FLG.	-------	A57-NL	710J57	-------	-------	-------
P	1-1/2" METER FLANGE – FLG. X F.I.P.; BRONZE WITH FULL FACE GASKET AND #304 STAINLESS STEEL BOLTS & NUTS NOTE: DEVELOPER'S CONTRACTOR SHALL INSTALL SPACER IN PLACE OF METER PER CWS CO'S DIRECTION	-------	-------	-------	-------	-------	-------
Q	1-1/2" METER FLANGE – FLG. X F.I.P.; BRONZE WITH FULL FACE GASKET AND #304 STAINLESS STEEL BOLTS & NUTS	-------	CF31-66-NL	7610F	421NL-6S/S	-------	-------
R	1-1/2" NIPPLE – LEAD FREE BRASS	-------	-------	-------	-------	-------	-------
S	2" 90° ELL, LEAD FREE BRASS – FIP X FIP	-------	-------	-------	-------	-------	-------
T	2" 90° ELL COUPLING – MIP X PEP	-------	L86-77-IDR7-NL	74779M-33	105NL-B7M7	-------	-------



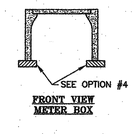
2" SERVICE WITH 2" METER

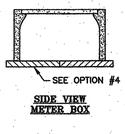


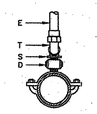
2" SERVICE WITH 1-1/2" METER



45° SIDE TAPPED CONNECTION







TAPPED AT TOP OF MAIN
USE THIS INSTALLATION ONLY FOR SERVICES LOCATED DIRECTLY ABOVE THE MAIN

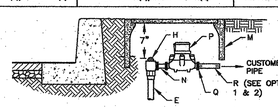
CW 436R9 — STANDARD 2" SERVICE CONNECTION FOR 2" METER OR 1-1/2" METER [POLYETHYLENE INSTALLATION]

PART LETTER	PART NAME	MUELLER	FORD	A.Y. McDONALD	CAMBRIDGE BRASS	SMITH-BLAIR	APAC
A	SERVICE SADDLE	H-13400	S90 SERIES	3805 SERIES	800 SERIES	393 SERIES	-------
B	SERVICE SADDLE	DR2A	F202 SERIES	4825A	-------	313 SERIES	102 SERIES
C	SERVICE SADDLE	BR2B	202B SERIES	3825 SERIES	810 SERIES	323 SERIES	-------
D	2" CORPORATION STOP – AWWA TAPER THREAD INLET X MIP	B-2998N	FB800-7-NL	7312BB	301NL-A7M7	-------	-------
E	2" COPPER	TYPE K SOFT PER LATEST REVISION OF ASTM SPECIFICATION B88					
F	2" 90° ELL COUPLING – CTS X CTS	P15528-N(P)/H15526-N(Q)	L44-77-NL(P)/L44-77-Q-NL(Q)	74761-22(P)/74761Q-2(Q)	105NL-B7B7(P)/105NL-H7H7(Q)	-------	-------
G	2" STRAIGHT COUPLING – CTS X CTS (SEE OPTION 5)	P15403-N(P)/H15403-N(Q)	C44-77-NL(P)/C44-77-Q-NL(Q)	74758-22(P)/74758Q-2(Q)	118NL-B7B7(P)/118NL-H7H7(Q)	-------	-------
H	2" BALL ANGLE METER VALVE – CTS X METER FLANGE – FULL PORT	P24276-N(P)/B24276-N(Q)	BFA13-777W-NL(P)/BFA63-777W-Q-NL(Q)	74602B-22(P)/74602BQ-2(Q)	210NL-B7MF7(P)/210NL-H7MF7(Q)	-------	-------
J	2" METER	-------	-------	-------	-------	-------	-------
K	2" METER FLANGE – FLG. X F.I.P.; BRONZE WITH FULL FACE GASKET AND #304 STAINLESS STEEL BOLTS & NUTS	-------	CF31-77-NL	7610F	421NL-7S/S	-------	-------
L	2" NIPPLE	-------	-------	-------	-------	-------	-------
M	METER BOX – BROOKS CONCRETE #65 BOX W/ #65S CONCRETE COVER & LID OR CHRISTY CONCRETE B6S BOX W/ B6SE CONCRETE COVER & LID NOTE: CAST IRON COVERS REQUIRED IN TRAFFIC AREAS	-------	-------	-------	-------	-------	-------
N	ADAPTER – 2" METER FLG. X 1-1/2" MET FLG.	-------	A57-NL	710J57	-------	-------	-------
P	1-1/2" METER	-------	-------	-------	-------	-------	-------
Q	1-1/2" METER FLANGE – FLG. X F.I.P.; BRONZE WITH FULL FACE GASKET AND #304 STAINLESS STEEL BOLTS & NUTS	-------	CF31-66-NL	7610F	421NL-6S/S	-------	-------
R	1-1/2" NIPPLE STD. LEAD–FREE BRASS	-------	-------	-------	-------	-------	-------
S	2" 90° ELL, FIP X FIP	-------	-------	-------	-------	-------	-------
T	2" 90° ELL – MIP X CTS	P15531-N(P)/H15531-N(Q)	L84-77-NL(P)/L84-77-Q-NL(Q)	74779M-22 2(P)/74779MQ-2(Q)	105NL-B7M7(P)/105NL-H7M7(Q)	-------	-------

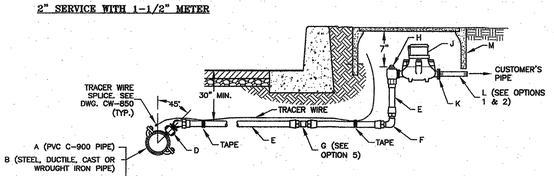
NOTE: P– PACK JOINT; Q– QUICK JOINT

NOTES:
1. 2" SERVICE SHALL BE INSTALLED FOR ALL 1-1/2" METERS.
2. A SADDLE SHALL BE USED FOR ALL 2" SERVICES.
3. RESPONSIBILITY FOR SERVICE MAINTENANCE BY CWS CO. ENDS AT DOWNSTREAM METER COUPLING (OR LEFT TO DISTRICT'S DISCRETION).
4. ALL PIPE FITTINGS IN CONTACT WITH DRINKING WATER SHALL BE LEAD FREE (< 0.25% LEAD) AND COMPLIANT TO NSF-61/SECTION 8.

OPTIONS:
THESE OPTIONS MAY BE REQUIRED BY CWS CO.
1. EXTEND CUSTOMER'S PIPING ±12" BEYOND METER BOX WITH TWO 12" NIPPLES & TWO 90° ELLS, BRASS (OR GALVANIZED IF PREFERRED BY CWS). SEE NOTE 3.
2. INSTALL BALL VALVE DOWNSTREAM FROM METER WHEN CUSTOMER'S PIPING IS UPHILL FROM METER OR CUSTOMER'S VALVE IS A GREAT DISTANCE FROM METER.
3. INSTALL 2" HDPE, INSTEAD OF COPPER WHEN CWS REPRESENTATIVE DETERMINES THAT CONDITIONS ARE UNFAVORABLE TO COPPER. REFER TO THE LATEST REVISION OF DWG# CW-436.
4. WHEN REQUIRED BY CWS COMPANY, PLACE BRICKS ON TWO SIDES OF METER BOX FOR SUPPORT (OR 2" x 4" PRESSURE TREATED LUMBER)
5. AT THE DIRECTIVE OF CWS REPRESENTATIVE, LEAD–FREE SOLDER JOINT COPPER FITTINGS MAY BE USED IN LIEU OF COMPRESSION FITTINGS FOR PART 'G'. INSTALLATION OF A SOLDERED FITTINGS SHALL CONFORM TO THE LATEST REVISION OF ASTM B828. ALL MATERIAL USED FOR SOLDERING SHALL BE LEAD–FREE.

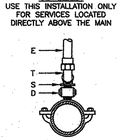


2" SERVICE WITH 1-1/2" METER



2" SERVICE WITH 2" METER

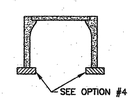
CW 1020 — STANDARD 2" SERVICE CONNECTION FOR 2" OR 1- 1/2" METER [COPPER INSTALLATION]



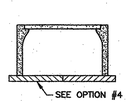
TAPPED AT TOP OF MAIN
USE THIS INSTALLATION ONLY FOR SERVICES LOCATED DIRECTLY ABOVE THE MAIN



45° SIDE TAPPED CONNECTION



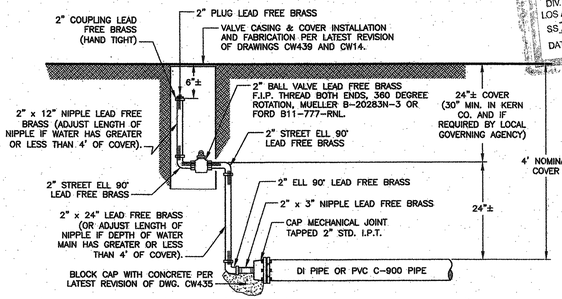
FRONT VIEW METER BOX



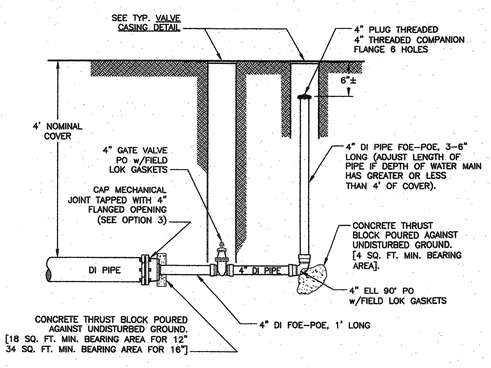
SIDE VIEW METER BOX

NOTE:
1. ALL PIPE FITTINGS IN CONTACT WITH WATER SHALL BE LEAD FREE (<0.25% LEAD) AND COMPLIANT TO NSF-61/SECTION 8.

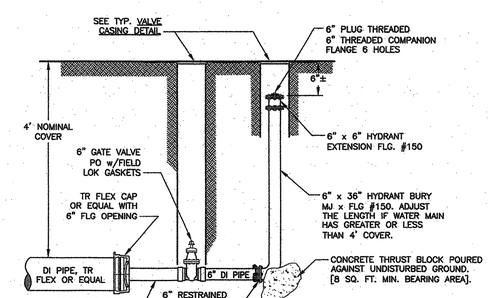
OPTIONS: THESE OPTIONS MAY BE REQUIRED BY CWS CO. AT THEIR DISCRETION.
1. FOR 2" BLOW OFFS LOCATED OUTSIDE TRAVELED WAYS OR WHERE STREET RECONSTRUCTION IS NOT A CONCERN, THE BALL VALVE MAY BE PLACED CLOSER TO FINISHED GRADE (+/–12") WITH SHORTER OR NO PERMANENT RISER. SWING JOINT (ONE STREET ELL) MAY BE ADDED AS AN OFFSET TO PROPERLY LOCATE THE BALL VALVE.
2. IN LIEU OF NOTCHING VALVE CASING FOR 2" PIPE, CASING MAY BE SET ON BRICKS OR PRESSURE TREATED LUMBER SO CASING IS JUST ABOVE 2" PIPE.
3. IN LIEU OF CAP WITH FLANGED OPENING FOR 12" PIPE, 12" x 4" REDUCER PO WITH FIELD LOK GASKETS MAY BE USED.



2" BLOW-OFF ASSEMBLY FOR 6" AND SMALLER PIPE
N.T.S.



4" BLOW-OFF ASSEMBLY FOR 12" TO 16" PIPE
N.T.S.



6" BLOW-OFF ASSEMBLY FOR 18" AND LARGER PIPE
N.T.S.

CW 122R5 — STANDARD BLOW OFF ASSEMBLY

APPROVED
DIV. OF THE STATE ARCHITECT
LOS ANGELES REGIONAL OFFICE
SS 214 FLS AC
DATE JUL 15 2016

ENGINEERING
DEPARTMENT
REVISIONS:

	DATE:	INIT.
DISTRIBUTION MAP		
PLAT SHEET		
STATION ALPHABETIC		
STATION SCHEMATIC		

PLAT SHEET NO.:
SCALE: N.T.S.
DRAWN BY: M. FONG
DESIGNED BY:
CHECKED BY: DATE:
APPROVED BY: DATE: 5/12/2016

TITLE: CALIFORNIA WATER SERVICE COMPANY STANDARD DRAWINGS
DISTRICT: ALL
DATE: 5/12/2016
PROJECT ID.:
DRAWING NO.: CWDWGS
SHT 2 OF 2

NEW ELEMENTARY SCHOOL
for
BAKERSFIELD CITY SCHOOL DISTRICT
at CITADEL ROAD & MARDI GRAS COURT
(Increment No. 1)
OFF-SITE IMPROVEMENTS

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO TITLE 24, 2016 CALIFORNIA CODE OF REGULATIONS.
2. CHANGE TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDUM OR CONSTRUCTION CHANGE DOCUMENT AND APPROVED BY DSA AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, C.C.R.
3. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE SCHOOL BOARD SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
4. ALL SPECIFICATIONS FOR ALTERATION, REHABILITATION OR RECONSTRUCTION PROJECTS; "THE INTENT" OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISH WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CHANGE ORDER, OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK."
5. A COPY OF TITLE-24, ALL PARTS APPLICABLE, TO BE KEPT AT THE JOB SITE AT ALL TIMES.
6. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS WILL BE CONSIDERED AS CHANGES TO APPROVED PLANS OR SPECIFICATIONS. THEY ARE TO BE TREATED AS ADDENDA OR CONSTRUCTION CHANGE DOCUMENTS, AND WILL REQUIRE DSA'S APPROVAL PRIOR TO FABRICATION AND INSTALLATION. (SEC.4-338(C), PART 1, AND IR-6)
7. ADDENDA SHALL BE STAMPED AND SIGNED BY A/E ON RECORD AND DELEGATED DESIGN PROFESSIONAL WHEN APPLICABLE, AND APPROVED BY DSA (SEC. 4-338(B), PART 1).
8. CONSTRUCTION CHANGE DOCUMENTS AND SUPPLEMENTARY DRAWINGS SHALL BE PREPARED AND SUBMITTED TO DSA IN COMPLIANCE TO DSA INTERPRETATION OF REGULATION IR A-6 (SEC. 4-338(C), PART 1).
9. THE TESTING LAB, WHEN REQUIRED, MUST BE EMPLOYED BY THE OWNER AND APPROVED BY A/E ON RECORD, STRUCTURAL ENGINEER WHEN APPLICABLE, AND DSA. (SEC.4-341(D), PART 1)
10. CFC CHAPTER 33, CBC CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION SHALL BE REGULATED
11. FABRICATION AND INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT BE STARTED UNTIL CONTRACTOR'S DRAWINGS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS FOR THE ACTUAL SYSTEMS TO BE INSTALLED HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECTS OR STRUCTURAL ENGINEER AND APPROVED BY THE DSA. LIST DEFERRED SUBMITTAL ITEMS FOR THIS PROJECT.
12. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
13. A DSA CERTIFIED PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT
14. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITYAT OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH THE TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION DOCUMENT (CCD) , OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(c), PART 1, TITLE 24, CCR)

PROJECT DIRECTORY

OWNER
BAKERSFIELD CITY SCHOOL DISTRICT
1300 BAKER STREET
BAKERSFIELD, CA 93305
TEL: 661-631-4600 FAX: 661-326-1485
RANDY ROWLES, DIRECTOR, MAINTENANCE & OPERATIONS
TEL: 661-631-5883 EM: ROWLESR@BCSD.COM

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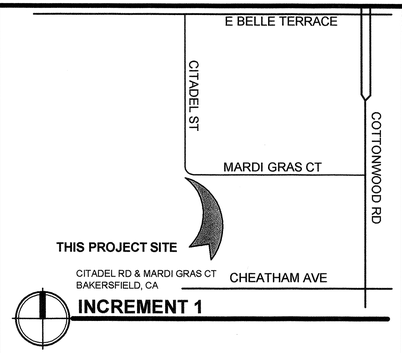
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BROOKS RANSOM ASSOC.
7415 PALM AVE. SUITE #100
FRESNO, CA. 93711
TEL: 559-449-8444 EXT. 226
FAX: 559-449-8404

MECHANICAL ENGINEER
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3C ENGINEERING
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TEL: 805-540-3363

ELECTRICAL ENGINEER
JOHN CHONG
JOHN CHONG ENEGINEERING
433 E. KEATS AVE
FRESNO, CA 93710
TEL: 559-325-9988
EM: JCENGINEER@AOL.COM

CIVIL ENGINEER
FREDDIE PORTER
PORTER & ASSOCIATES
1200 21ST STREET
BAKSERSFIELD, CA
TEL: 661-327-0362
EM: FRED2@PORTERCIVIL.COM

VICINITY MAP



BUILDING DATA

SEE INCREMENT 2 & 3

DEFERRED SUBMITTALS

NONE

SHEET INDEX

SHT. NO.	DESCRIPTION
	ARCHITECTURE
SHT. NO.	SHT. TITLE
T1.01	TITLE SHEET
A1.00	OVERALL MASTER SITE PLAN
A1.01	OFFSITE DEMOLITION PLAN
A1.02	OFFSITE IMPROVEMENT PLAN
	CIVIL
SHT. NO.	SHT. TITLE
	City of Bakersfield Off-site Review Set
C0.01	STREET IMPROVEMENT PLANS FIRE HYDRANT PLAN
C1.01	STREET IMPROVEMENT PLANS TITLE SHEET
C1.02	STREET IMPROVEMENT PLANS GENERAL NOTES - DETAILS
C1.03	STREET IMPROVEMENT PLANS MARDI GRAS COURT
C1.04	STREET IMPROVEMENT PLANS CITADEL STREET
C2.01	SEWER & STORM DRAIN PLANS TITLE SHEET
C2.02	SEWER & STORM DRAIN PLANS GENERAL NOTES - DETAILS
C2.03	SEWER & STORM DRAIN PLANS MARDI GRAS COURT
C2.04	SEWER & STORM DRAIN PLANS CITADEL STREET
C3.01	STREET LIGHT DIAGRAM
	County of Kern Off-site Review Set
C4.01	STREET ENCROACHMENT PLANS TITLE SHEET
C4.02	STREET ENCROACHMENT PLANS COTTONWOOD ROAD
C4.03	STREET ENCROACHMENT PLANS SIGNING & STRIPING PLAN
C4.04	STREET ENCROACHMENT PLANS SIGNING & STRIPING PLAN
	SWPPP Requirements & General Details
C4.05	CIVIL IMPROVEMENT PLANS STANDARD DETAILS
C5.01	EROSION, SEDIMENT, & DUST CONTROL PLAN
	PLUMBING
P1.01	OFF-SITE GAS MAIN PIPING PLAN
	ELECTRICAL
E0.01	DETAILS & NOTES
E0.02	OFF-SITE ELECTRICAL UTILITY PLAN

SCOPE OF WORK

INCREMENT #1: (THIS SUBMITTAL)

OFF-SITE UTILITIES
OFF-SITE STREET IMPROVEMENTS

INCREMENT #2 (NEW K-6 CAMPUS):

NEW ADMINISTRATION BUILDING / LIBRARY

NEW MULTI-PURPOSE BUILDING

PARKING FACILITIES WITH PASSENGER AND BUS-LOADING AREAS

PAVED WALKS FOR ACCESSIBLE P.O.T.

PLAY COURTS FOR BASKETBALL & TETHERBALL PAVED TRACK FOR TRACK AND FIELD

PLAY FIELDS FOR SOCCER & BASEBALL

OUTDOOR AMPHITHEATER

RELOCATION OF IRRIGATION PIPELINE

INCREMENT #3 (MODULAR CLASSROOMS)
8 WINGS - MODULAR CLASSROOM BUILDINGS
SITE IMPROVMENTS REALTED TO MODULAR CLASSROOM BUILDING PLACEMENT

APPLICABLE CODES:

COMPLY WITH PART 1, TITLE 24, 2016 CCR. A COPY OF TITLE 24 SHALL BE ON SITE AT ALL TIMES. CONSTRUCTION SHALL COMPLY WITH TITLE 24 CALIFORNIA CODE OF REGULATIONS. INCLUDING THE FOLLOWING:

TITLE 24, CCR, PART 2, 2016 CBC
(2006 IBC, WITH CALIFORNIA AMENDMENTS).

TITLE 24, CCR, PART 3, 2016 CEC
(2005 NEC, WITH CALIFORNIA AMENDMENTS).

TITLE 24, CCR, PART 4, 2016 CMC
(2006 UMC, WITH CALIFORNIA AMENDMENTS).

TITLE 24, CCR, PART 5, 2016 CPC
(2006 UPC, WITH CALIFORNIA AMENDMENTS).

TITLE 24, CCR, PART 6, 2016 CEC

TITLE 24, CCR, PART 9, 2016 CFC
(2006 IFC, WITH CALIFORNIA AMENDMENTS).

TITLE 19, CCR.

NFPA 72, 2016 EDITION
(AS PER CA AMENDMENTS)

ARCHITECT'S STATEMENT

ARCHITECT'S STATEMENT FOR PLANS PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS

THESE DRAWINGS AND/OR SPECIFICATIONS AND/OR CALCULATIONS FOR THE ITEMS LISTED IN THE SHEET INDEX AND CHECKED BELOW HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DOCUMENTS IN THIS STATE. THESE DOCUMENTS HAVE BEEN EXAMINED BY ME FOR DESIGN INTENT AND HAVE BEEN FOUND TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME.

THE ITEMS CHECKED BELOW ARE ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT FOR WHICH I AM THE INDIVIDUAL DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE (OR FOR WHICH I HAVE DELEGATED RESPONSIBILITY FOR THIS PORTION OF THE WORK.)

SEE THE SHEET INDEX ON THIS SHEET FOR DRAWINGS OTHER THAN ARCHITECTURAL.

APPLICABLE:

☐ STRUCTURAL ☒ PLUMBING ☒ MECHANICAL ☒ ELECTRICAL
☒ CIVIL ☐ RELOCATABLE BLDG.

SIGNATURE OF THE ARCHITECT/ENGINEER — DATE 3/9/18
NAME, TITLE, AFFILIATION
CURTIS E. FLYNN , ARCHITECT, INTEGRATED DESIGNS BY SOMAM, INC.

C-28966 — LICENSED NUMBER
05-31-19 — EXPIRATION DATE

SYMBOLS

DETAIL KEY
1 / A2.01 — DETAIL NUMBER / SHEET NUMBER

1 — KEYNOTE SCHEDULE KEY

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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: TITLE SHEET

Project Name & Address:
INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC: INITIALS
01-31-18	03/09/18	--	--	PC

DSA Identification Stamp:

FILE #: 15-6
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OFFICE OF REGULATION SERVICES
03-118394
FLS STRUSS IN
DATE MAR 12 2018
TRACKING #: 63321-300

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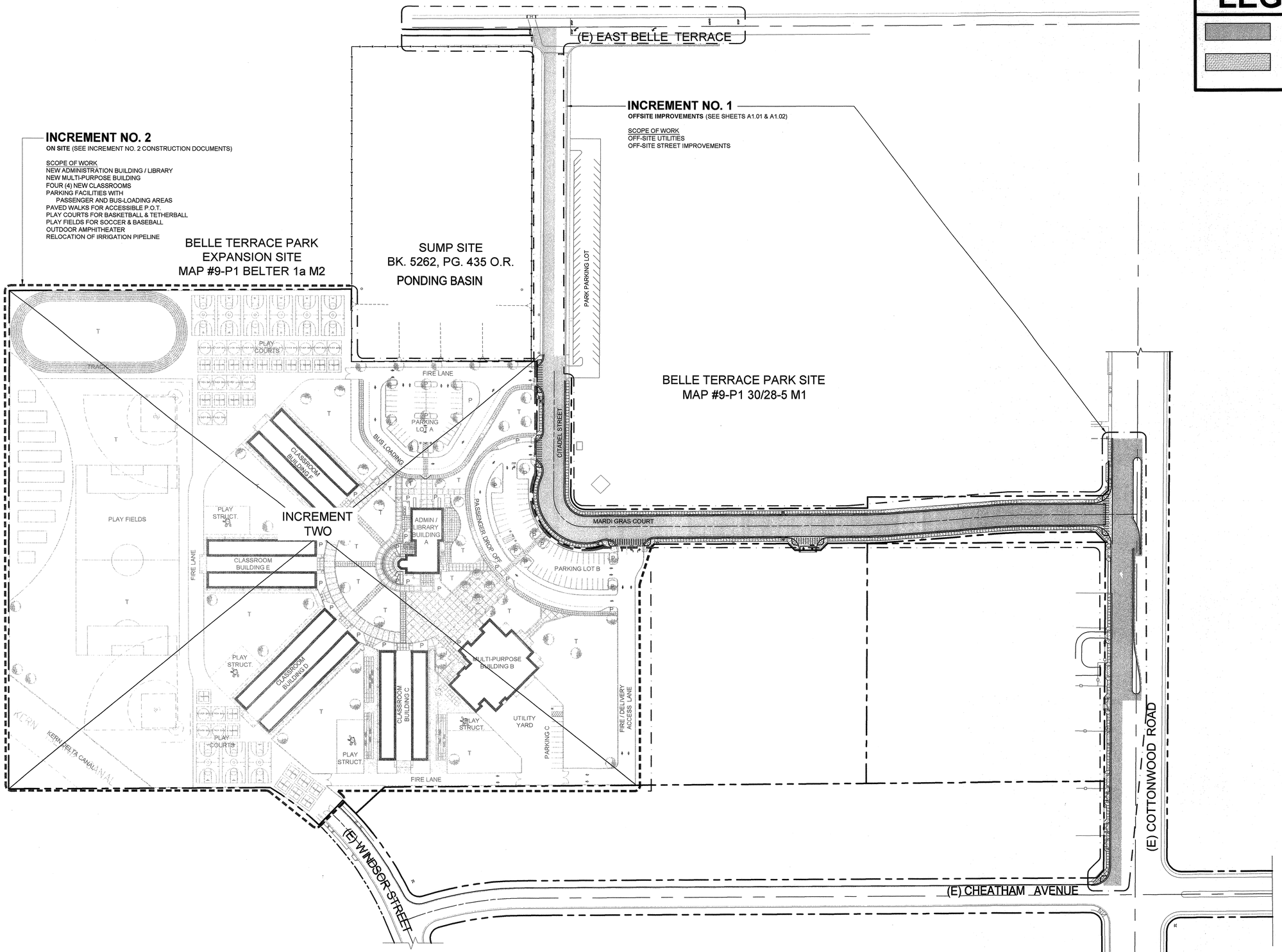
LICENSED ARCHITECT
CURTIS E. FLYNN
No. C 28966
REN. 05-31-19
STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: T1.01

Release: -

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OVERALL MASTER SITE PLAN

INCREMENT 1

SCALE: 1" = 80'

LEGEND

- NEW ASPHALT PAVEMENT
- NEW CONCRETE PAVEMENT

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www.integrateddesigns.com

Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: OVERALL MASTER SITE PLAN

Project Name & Address:
NEW ELEMENTARY SCHOOL
INCREMENT 1
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC: INITIALS
01–31–18	---	---	---
Date: 10/12/17			

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03–118394
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DATE: MAR 12 2018
TRACKING #: 63321–300

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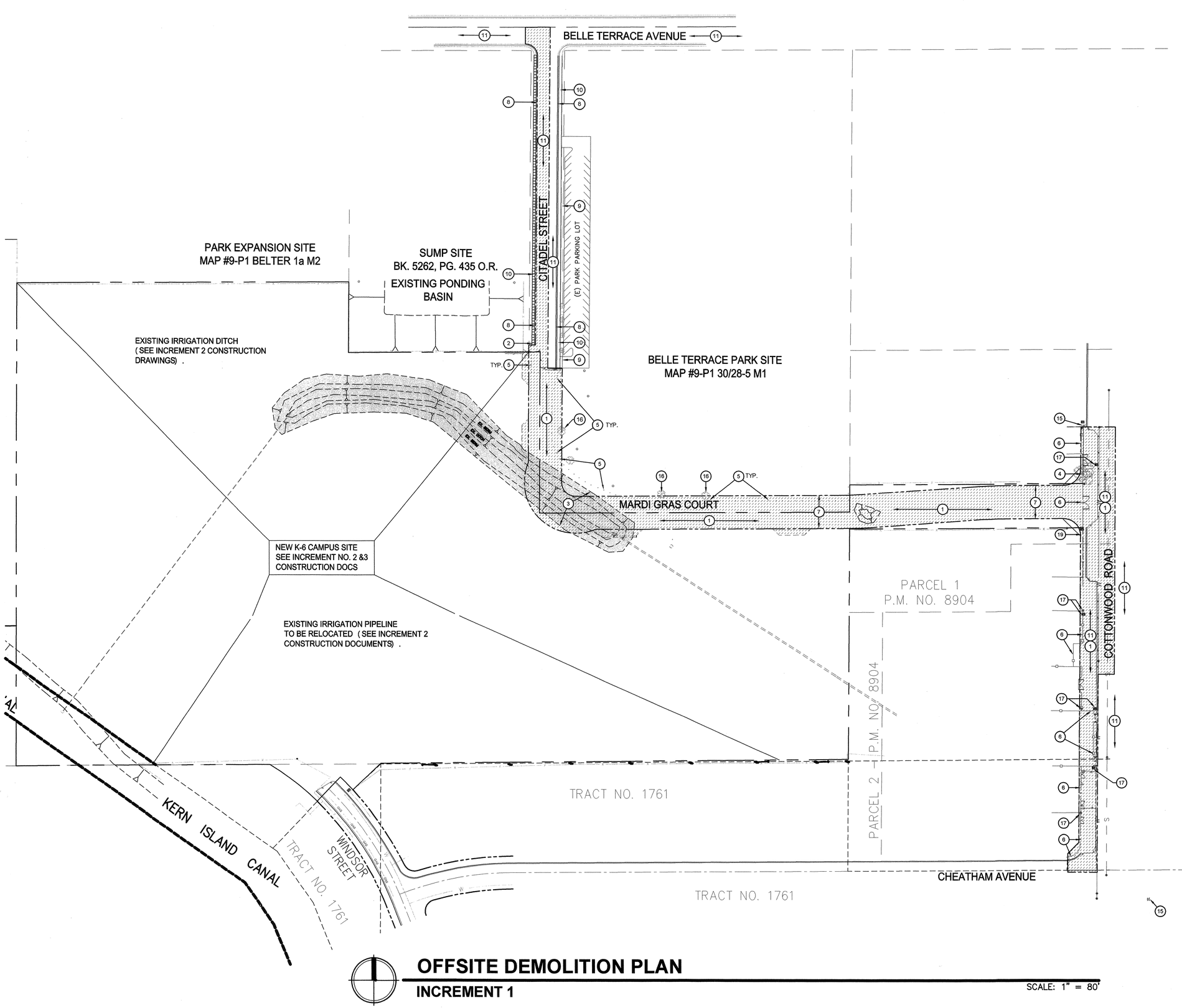
LICENSED ARCHITECT
CURTIS E. FLYNN
No. C 28956
REN. 8–31–19
STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: A1.00

Release: -

G:\2017frs\17-5262 bcsd new elementary\Sheets\A1.00 MASTER OVERALL SITE PLAN.dwg KYLE PEGRAM



OFFSITE DEMOLITION PLAN

INCREMENT 1

SCALE: 1" = 80'

KEYNOTES

1. HATCHED AREA INDICATES GENERAL AREA DESIGNATED FOR STREET IMPROVEMENT — SEE CIVIL DRAWINGS FOR EXTENT OF DEMOLITION, REMOVAL, EXCAVATION, GRADING, AND REPLACEMENT
2. REMOVE (E) SIDEWALK TO NEAREST JOINT AS REQUIRED FOR W/C RAMP SEE CIVIL DRAWINGS
3. REMOVE (E) VEGETATION & ROOT SYSTEMS IN AREA OF STREET IMPROVEMENT — SEE CIVIL DRAWINGS
4. REMOVE (E) TREE & ROOT BALL
5. (E) GUARD POSTS — SEE CIVIL DRAWINGS FOR RELOCATION, TYP. OF 75
6. (E) FENCE & GATES — SEE CIVIL DRAWINGS
7. (N) RIGHT OF WAY
8. (E) CURB & GUTTER TO REMAIN
9. (E) DRIVE APPROACH TO REMAIN
10. (E) SIDEWALK TO REMAIN
11. (E) STREET PAVING — SEE CIVIL DRAWINGS FOR EXTENT OF REMOVAL REQUIRED FOR NEW IMPROVEMENTS — SEE SITE UTILITY DRAWINGS FOR TRENCHING & BACK-FILL REQUIREMENTS — TRENCH, BACK-FILL, AND PATCH ALL UTILITY TRENCHES PER CITY/COUNTY STANDARDS AS APPLICABLE.
12. (E) FENCE — SEE CIVIL DRAWINGS FOR WORK
13. (E) UTILITY POLE — SEE OFF-SITE ELECTRICAL DRAWINGS
14. (E) STREET LIGHT
15. (E) FIRE HYDRANT
16. (E) TREE — SEE CIVIL DRAWINGS
17. (E) APPURTENANCE — SEE CIVIL DRAWINGS FOR RELOCATION
18. (E) IMPROVEMENTS TO REMAIN
19. REMOVE (E) DRIVE APPROACH — SEE CIVIL

LEGEND

AREA OF STREET IMPROVEMENT

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www.integrateddesigns.com

Revision:	Revision Description:	Rev. Date:	Revision:	Rev. Date:

Sheet Title: OFFSITE DEMOLITION PLAN

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 1
BAKERSFIELD CITY SCHOOL DISTRICT
@CITADEL STREET MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
01–31–18	03/09/18	--	--	PC INITIALS

Agency Approval Stamp:

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DIV. OF THE STATE ARCHITECT
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03–118394
APPROVED
DATE MAR 12 2018
TRACKING #: 63321–300

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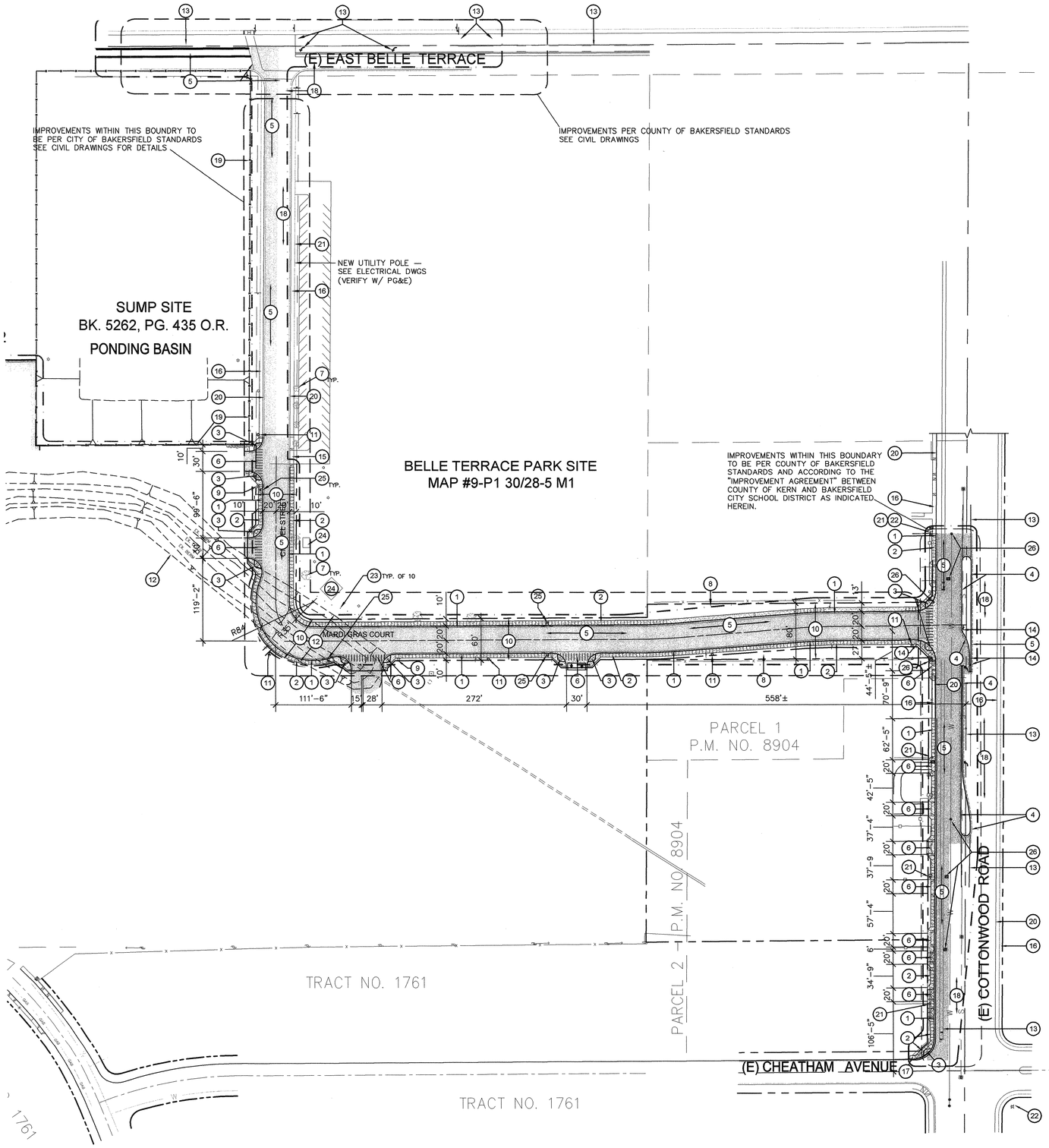
LICENSED ARCHITECT
CURTIS E. FLYNN
No. C 28966
EXP. 8-31-19
STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: A1.01

Release: -

G:\2017frs\17-5262 bcsd new elementary\Sheets\A1.01 OFFSITE DEMOLITION PLAN.dwg KYLE PEGRAM



OFFSITE IMPROVEMENT PLAN

INCREMENT 1

SCALE: 1" = 80'

KEYNOTES

1. CONSTRUCT 6" CURB & GUTTER - SEE CIVIL DRAWINGS
2. CONSTRUCT 5' WIDE COMBINATION TYPE SIDEWALK - SEE CIVIL DRAWINGS
3. CONSTRUCT WHEEL CHAIR RAMP - SEE CIVIL DRAWINGS
4. CONSTRUCT MEDIAN CURB - SEE CIVIL DRAWINGS
5. INSTALL NEW A/C PAVING PER CIVIL DRAWINGS - SEE UTILITY PLANS FOR TRENCH BACKFILL & AC PATCHING REQUIREMENTS
6. INSTALL NEW DRIVE APPROACH - SEE CIVIL DRAWINGS
7. EXISTING TREE
8. LANDSCAPE STRIP (FUTURE) - SEE CIVIL DRAWINGS FOR IRRIGATION SLEEVES
9. NEW FIRE HYDRANT PER CITY OF BAKERSFIELD REQUIREMENTS - SEE CIVIL DRAWINGS
10. DEDICATION RIGHT-OF-WAY BOUNDARY LINE
11. NEW STREET LIGHT - SEE CIVIL DRAWINGS
12. EXCAVATE, FILL & COMPACT (E) IRRIGATION DITCH AS REQUIRED FOR NEW STREET IMPROVEMENTS - SEE CIVIL DRAWINGS
13. (N) PAVEMENT STRIPING/MARKINGS - SEE CIVIL DRAWINGS
14. TRAFFIC SIGNAGE PER CITY OF BAKERSFIELD STANDARDS - SEE CIVIL DRAWINGS
15. EXISTING DRIVE APPROACH TO REMAIN
16. EXISTING SIDEWALK TO REMAIN - SEE CIVIL DRAWINGS
17. EXISTING DRAIN INLET TO REMAIN
18. EXISTING ASPHALT STREET PAVEMENT - SEE CIVIL DRAWINGS FOR EXTENT OF REMOVAL & REPLACEMENT - SEE OFF SITE PLUMBING & ELECTRICAL UTILITY DRAWINGS FOR TRENCH & BACKFILL REQUIREMENTS - PATCH STREET PER CITY OF BAKERSFIELD STANDARDS
19. EXISTING CHAIN LINK FENCE
20. EXISTING CURB & GUTTER - SEE CIVIL DRAWINGS
21. (E) UTILITY POLE - SEE CIVIL & ELECTRICAL DRAWINGS
22. EXISTING FIRE HYDRANT
23. EXISTING WOOD GUARD POST
24. EXISTING CONC. SLAB
25. NEW STORM DRAIN INLET - SEE CIVIL DRAWINGS
26. EXISTING APPURTENANCE - SEE CIVIL DRAWINGS FOR RELOCATION

GENERAL NOTES

SEE SITE UTILITY PLANS FOR UNDERGROUND UTILITY WORK

SEE CIVIL DRAWINGS FOR COMPLETE SCOPE OF STREET IMPROVEMENTS

LEGEND

NEW ASPHALT PAVING
SEE CIVIL DRAWINGS

NEW CONCRETE FLATWORK

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Revision:	Revision Description:	Rev. Date:

Sheet Title: OFFSITE IMPROVEMENT PLAN

Project Name & Address: NEW ELEMENTARY SCHOOL increment 1
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
01–31–18	--	--	PC: INITIALS
Date: 03/09/18			

Agency Approval Stamp:

FILE #: 15–6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03–118394
APPROVED AS NOTED BY: FLS
DATE: MAR 12 2018
TRACKING #: 63321–300

Stamp(s):

LICENSED ARCHITECT
CURTIS C. FLYNN
No. C 28966
REN. 08-31-19
STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: A1.02

Release: -

G:\2017\rs\17-5262 bcsd new elementary\Sheets\A1.02 OFFSITE IMPROVEMENT PLAN.dwg KYLE PEGRAM

CITADEL STREET

EXISTING FIRE HYDRANT

587'

PROPOSED FIRE HYDRANT

CITADEL STREET

PROPOSED SCHOOL SITE

255'

BELLE TERRACE PARK SITE

10+00.00 CL INT.

11+33.73 CL DWY

14+43.25 CL DWY

15+47.54 BC

15+81.83 EC

17+82.62 BC

18+16.90 EC

MARDI GRAS COURT

205'

785'

PROPOSED DRIVEWAY

PROPOSED FIRE HYDRANT

PROPOSED SCHOOL SITE

PROPOSED DRIVEWAY

EXISTING FIRE HYDRANT

COTTONWOOD ROAD

HORIZONTAL: 1"=40'

160'

20+18.33 CL INT.

1" = 40'-0"

1" = 30'-0"

1" = 20'-0"

1/8" = 1'-0"

1/4" = 1'-0"

City acknowledgement of water plans for construction and approval of plans by signature does not abrogate City's right to require corrections by omission or misinterpretation. Authorized City inspection of work may require changes in plans before certification and acceptance in order to comply with standard specifications.

CITY OF BAKERSFIELD WATER RESOURCES DEPT. — DATE

for the Applicants Only

Hydrant Locations only

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PORTER & ASSOCIATES, INC.
ENGINEERING & SURVEYING
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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: STREET IMPROVEMENT PLANS
FIRE HYDRANT PLACEMENT PLAN

Project Name & Address: INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date: -
Date: 9/29/2017
Designer: ---
DR: LGH
PC: -

Agency Approval Stamp:

FILE #: 03-118394
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
DSA APPLICATION NO.
AC FLS SS TN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):

REGISTERED PROFESSIONAL ENGINEER — REED W. PORTER — RCE 74059 — CIVIL — STATE OF CALIFORNIA

LICENSED ARCHITECT — CURTIS L. EPPINK — No. C-26966 — REN. 5-31-19 — STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C0.01

Release: -

J:\13014\Improvements\Fire Hydrant Plan.dwg LUIS

STREET IMPROVEMENT PLANS
PROPOSED SCHOOL SITE
(CITADEL STREET AND MARDI GRAS COURT)
BAKERSFIELD, CALIFORNIA

ENGINEER'S STATEMENT:

THESE PLANS AND SPECIFICATIONS WERE PREPARED BY ME OR UNDER MY DIRECTION, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH CITY OF BAKERSFIELD ORDINANCES, STANDARDS AND DESIGN CRITERIA, AND INCLUDE ALL IMPROVEMENT REQUIREMENTS OF THE ADVISORY AGENCY OR OTHER REVIEW BOARD. ANY ERRORS, OMISSIONS OR OTHER VIOLATIONS OF THOSE ORDINANCES, STANDARDS OR DESIGN CRITERIA ENCOUNTERED DURING CONSTRUCTION SHALL BE CORRECTED AND ALL SUCH CORRECTIONS SHALL BE REFLECTED ON REVISED OR AS-BUILT PLANS TO BE SUBMITTED TO THE CITY ENGINEER.

3-12-18

FRED W. PORTER R.C.E. 33448 DATE

REVIEWED BY:

TRAFFIC ENGINEER, CITY OF BAKERSFIELD DATE

REVIEWED BY:

ASSISTANT PUBLIC WORKS DIRECTOR, CITY OF BAKERSFIELD DATE

APPROVED BY:

PUBLIC WORKS DIRECTOR, CITY OF BAKERSFIELD DATE
NICOLAS FIDLER C 61069

BENCHMARK USED:

TOP OF CONCRETE MONUMENT IN LAMPHOLE AT THE EAST QUARTER CORNER OF SECTION 5, 30/28 M.D.M. LYING 29.45' SOUTH OF THE CENTERLINE INTERSECTION OF EAST BELLE TERRACE AND COTTONWOOD ROAD.

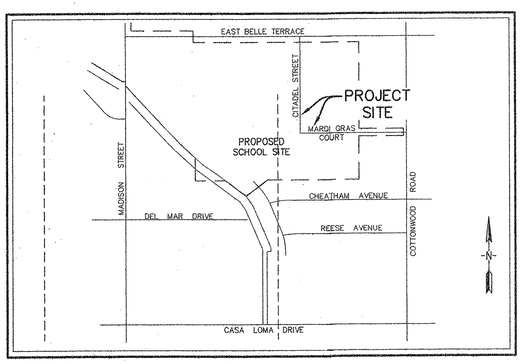
ELEVATION = 385.41 (USGS DATUM) PER TRACT 6378 PLANS

BASIS OF BEARINGS:

THE BEARING OF NORTH 89°41'23" EAST FOR THE NORTH LINE OF THE SOUTHEAST QUARTER OF SECTION 5, T. 30 S., R. 28 E., M.D.B.& M. (ALSO BEING THE CENTERLINE OF EAST BELLE TERRACE) PER RECORD OF SURVEY NO. 3546 FILED IN BOOK 30 OF RECORD OF SURVEYS AT PAGE 100 IN THE OFFICE OF THE KERN COUNTY RECORDER'S OFFICE WAS USED AS THE BASIS OF BEARINGS SHOWN UPON THIS MAP.

LEGAL DESCRIPTION:

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 30 SOUTH, RANGE 28 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE CITY OF BAKERSFIELD, COUNTY OF KERN, STATE OF CALIFORNIA.



VICINITY MAP
NO SCALE

BIOLOGICAL CLEARANCE SURVEY NOTE

ALL CONSTRUCTION ACTIVITY, INCLUDING STAGING, SHALL BE WITHIN THE LIMITS SHOWN ON THIS PLAN. CONTRACTOR SHALL OBTAIN A COPY OF THE BIOLOGICAL CLEARANCE SURVEY FOR THIS PROJECT. CONTRACTOR SHALL BE SOLELY LIABLE AND RESPONSIBLE FOR FOLLOWING THE RECOMMENDATIONS OF THE BIOLOGICAL CLEARANCE SURVEY. NO STAGING, GRADING, OR OTHER DISTURBANCE SHALL OCCUR OUTSIDE THE LIMITS SHOWN ON THIS PLAN.

LEGEND

CL–	CENTERLINE
DWY–	DRIVEWAY
FL–	FLOWLINE
BCR–	BEGIN CURB RETURN
ECR–	END CURB RETURN
PI–	POINT OF INTERSECTION
EC–	END CURVE
BC–	BEGIN CURVE
PIVC–	POINT OF INTERSECTION VERTICAL CURVE
POVC–	POINT ON VERTICAL CURVE
BVC–	BEGIN VERTICAL CURVE
EVC–	END VERTICAL CURVE
PRC–	POINT OF REVERSE CURVATURE
PCC–	POINT OF COMPOUND CURVATURE
POC–	POINT ON CURVE
GB–	GRADE BREAK
HP–	HIGH POINT

MATERIALS LIST

ESTIMATED QUANTITIES FOR PLAN CHECK AND INSPECTION FEE CALCULATIONS. NOT TO BE USED FOR BIDDING PURPOSES.

STREETS

LOCAL STREET	1,317 LF
0.30' A.C./0.40' A.B.	48,287 SF
6" CURB AND GUTTER	2,368 LF
CONCRETE SIDEWALK	12,892 SF
SURVEY MONUMENT ENCASEMENT	6 EA
STREET NAME SIGNS	1 EA
TRAFFIC CONTROL SIGNS	14 EA
WHEELCHAIR RAMPS	8 EA
CATCH-BASIN	4 EA
LED STREET LIGHTS	5 EA
COMMERCIAL DRIVE APPROACH	652 SF
SAWCUT	880 LF
SAWCUT AND REPLACE EX. PAVEMENT (CITADEL STREET)	3,960 SF

SHEET No. INDEX

C1.01 TITLE SHEET
C1.02 GENERAL SPECIFICATIONS TYPICAL SECTIONS
C1.03 MARDI GRAS COURT
C1.04 CITADEL STREET

LEGEND

- (X) SHEET INDEX NUMBER
- DIRECTION OF DRAINAGE
- CONCRETE MONUMENT
- EXISTING STREET NAME SIGN
- 5800 LUMEN STREET LIGHT
- CB#12 CATCH BASIN w/NUMBER
- PROPOSED STREET NAME SIGN

SWPPP NOTE

IF THE PROJECT IS SUBJECT TO THE PROVISIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), A "NOTICE OF INTENT" (NOI) TO COMPLY WITH THE TERMS OF THE GENERAL PERMIT TO DISCHARGE STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY (SWRCB ORDER NO. 2009-009-DWQ AS AMENDED BY ORDER 2010-0014-DWQ AND ORDER 2012-0006-DWQ) MUST BE FILED WITH STATE WATER RESOURCES CONTROL BOARD IN SACRAMENTO BEFORE THE BEGINNING OF ANY CONSTRUCTION ACTIVITY. COMPLIANCE WITH THE GENERAL PERMIT REQUIRES THAT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) BE PREPARED, CONTINUOUSLY CARRIED OUT, AND ALWAYS BE AVAILABLE FOR PUBLIC INSPECTION DURING NORMAL CONSTRUCTION HOURS. WASTE DISCHARGE IDENTIFICATION (WDID) NUMBER 5F15C382606 HAS BEEN ISSUED BY THE STATE WATER RESOURCES BOARD FOR THIS PROJECT.

OPEN STREET PERMIT NOTE

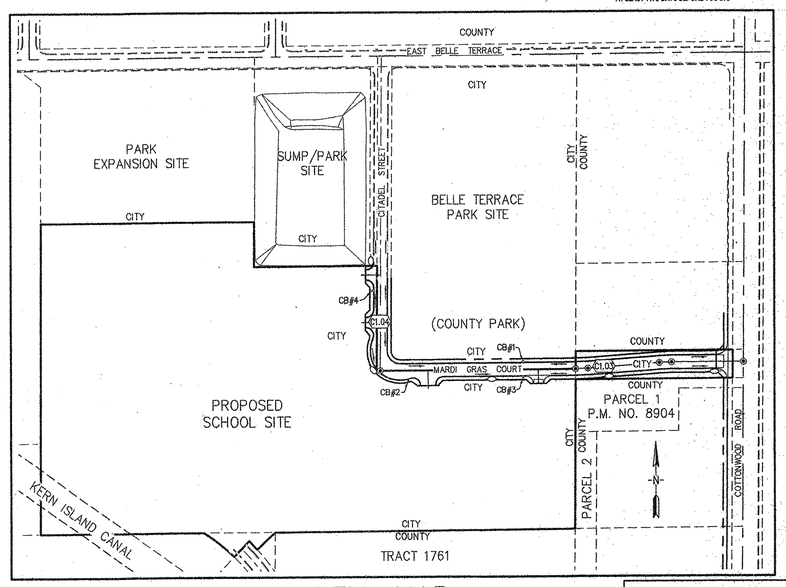
AN OPEN STREET PERMIT SHALL BE OBTAINED FROM THE CITY OF BAKERSFIELD PUBLIC WORKS DEPARTMENT FOR ANY WORK PERFORMED WITHIN EXISTING ACCEPTED STREET RIGHT OF WAY. UNLESS SECURED BY A SUBDIVISION AGREEMENT, SECURITY BASED ON AN APPROVED ENGINEER'S ESTIMATE FOR THE WORK PERFORMED WITHIN RIGHT OF WAY AND INSURANCE AS REQUIRED SHALL BE PROVIDED PRIOR TO ISSUANCE OF A PERMIT.

CITY INSPECTION NOTE

NO CITY INSPECTIONS SHALL BE GIVEN FOR THE WORK IN THIS AREA UNTIL AN ENCROACHMENT PERMIT WITH APPROPRIATE SECURITY AND INSURANCE HAS BEEN OBTAINED.

UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DIAL TOLL FREE 1-800-227-2600 AT LEAST TWO DAYS BEFORE YOU DIG



KEY MAP
SCALE: 1"=200'

C.O.B. RECORDS NO.

J:\3014\Improvements\City Approval\Street Plans\dwg\3014-ST_Front Sheet.dwg

NATE SLINKARD

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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: STREET IMPROVEMENT PLANS
TITLE SHEET

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 1
BAKERSFIELD CITY SCHOOL DISTRICT
MARDI GRAS COURT - CITADEL STREET

Issue Date: Date: 3/12/2018
Designer: DR: LGH PC:

Agency Approval Stamp:

FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
APPR'D LS SS IN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s): -

REGISTERED PROFESSIONAL ENGINEER FRED W. PORTER RCE 33448 CIVIL STATE OF CALIFORNIA

LICENSED ARCHITECT CHRISTIAN E. FINNEY No. C-28966 REN. 5-31-19 STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C1.01

Release: -

1" = 40'-0" | 1" = 30'-0" | 1" = 20'-0" | 1/8" = 1'-0" | 1/4" = 1'-0"

GENERAL SPECIFICATIONS

1. ALL CONSTRUCTION SHALL CONFORM TO THIS PLAN, THE CALIFORNIA BUILDING CODE, CITY OF BAKERSFIELD ORDINANCE No. 4637, LATEST EDITION AND STANDARDS PERTAINING THERETO. THESE DOCUMENTS SHALL BE MADE A PART HEREOF.
2. ALL CONSTRUCTION WITHIN THE CITY RIGHT-OF-WAY OR CITY EASEMENTS SHALL BE IN ACCORDANCE WITH CITY OF BAKERSFIELD STANDARDS AND STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED MAY 2006. THESE STANDARDS, DRAWINGS AND DETAILS SHALL BE CONSIDERED A PART OF THESE PLANS AND THE CONTRACTOR SHALL OBTAIN A COPY FOR HIS USE.
3. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS BEFORE START OF CONSTRUCTION. AN OPEN STREET PERMIT SHALL BE OBTAINED FROM THE CITY OF BAKERSFIELD FOR ANY WORK TO BE PERFORMED IN THE EXISTING, ACCEPTED STREET RIGHT-OF-WAY. UNLESS SECURED BY A SUBDIVISION AGREEMENT, SECURITY BASED ON AN APPROVED ENGINEER'S ESTIMATE FOR THE WORK PERFORMED WITHIN THE STREET RIGHT-OF-WAY AND INSURANCE, AS REQUIRED, SHALL BE PROVIDED BY THE CONTRACTOR PRIOR TO ISSUANCE OF A PERMIT.
4. 24 HOUR NOTICE: PRIOR TO THE START OF ANY PHASE OF CONSTRUCTION, THE CITY CONSTRUCTION INSPECTION SECTION SHALL BE GIVEN AT LEAST 24 HOURS NOTICE. THE SECTION MAY BE NOTIFIED AT (661) 326-3049.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING DIMENSIONS, DATA AND MEASUREMENTS AT THE BUILDING SITE PRIOR TO CONSTRUCTION. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. PORTER & ASSOCIATES, INC. MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.
6. EXISTING UTILITY AND UNDERGROUND LINES HAVE BEEN SHOWN ON THIS PLAN ACCORDING TO AVAILABLE RECORDS. THE ENGINEER IS NOT RESPONSIBLE FOR POSSIBLE ERRORS OR OMISSIONS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF ANY WORK. UNDERGROUND SERVICE ALERT (U.S.A.: 1-800-227-2600) SHALL BE CONTACTED AT LEAST TWO WORKING DAYS PRIOR TO ANY CONSTRUCTION OR EXCAVATION.
7. ANY EXISTING IMPROVEMENTS OR UTILITIES THAT ARE REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE, AS DIRECTED BY THE ENGINEER AND APPROVED BY THE GOVERNING AUTHORITY.
8. IF A PROBLEM OR CONFLICT SHOULD ARISE DURING THE COURSE OF THE PROJECT, IT IS THE RESPONSIBILITY OF THE OWNER OR THE CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY PRIOR TO ANY FURTHER WORK.
9. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND SUPERVISION NECESSARY FOR A COMPLETE AND FUNCTIONAL PRODUCT.
10. ALL WORK WHICH IS DEFECTIVE IN ITS CONSTRUCTION OR DEFICIENT IN ANY OF THE REQUIREMENTS OF THESE DRAWINGS AND SPECIFICATIONS SHALL BE REMEDIED, OR REMOVED AND REPLACED BY THE CONTRACTOR IN AN ACCEPTABLE MANNER, AND NO COMPENSATION WILL BE ALLOWED FOR SUCH CORRECTION.
11. IN THE EVENT CONSTRUCTION STAKING BASED ON THE CONSULTANT'S PLANS, DRAWINGS OR OTHER DOCUMENTS IS ACCOMPLISHED BY ANYONE OTHER THAN THE CONSULTANT, THE OWNER OR CONTRACTOR SHALL NOTIFY THE BUILDING OFFICIAL IN WRITING AS TO THE CHANGE OF ENGINEER IN RESPONSIBLE CHARGE.
12. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT; INCLUDING EROSION, SEDIMENTATION & DUST CONTROL PLAN AND STORM WATER POLLUTION PREVENTION PLAN IMPLEMENTATION AND THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
13. IF THE CONTRACTOR IS IN DOUBT AS TO THE MEANING OF ANY PART OF THE DRAWINGS AND SPECIFICATIONS OR FINDS DISCREPANCIES IN OR OMISSIONS FROM THE DRAWINGS, HE SHALL SUBMIT A WRITTEN REQUEST FOR AN INTERPRETATION OR A CORRECTION THEREOF, PRIOR TO FILING HIS BID PRICE FOR THE PROJECT.
14. PORTER & ASSOCIATES, INC. WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ANY AND ALL CHANGES TO THESE PLANS MUST BE APPROVED IN WRITING BY PORTER & ASSOCIATES, INC.
15. NORMAL STAKING AND MARKING OF THE PROJECT WILL BE SUPPLIED ONLY ONCE. ALL RESTAKING OR REMARKING SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

COB STREET IMPROVEMENT SPECIFICATIONS

1. THE SUBDIVIDER, IF REQUIRED, SHALL OBTAIN GRADING APPROVAL AS REQUIRED BY CITY OF BAKERSFIELD ORDINANCE, PRIOR TO START OF ANY EARTHWORK.
2. ANY TRENCHING TO BE CONDUCTED WITHIN THIS PROJECT SHALL BE BACKFILLED AND COMPACTED PER CITY STANDARD DETAIL ST-22.
3. THE CONTRACTOR SHALL REMOVE OR RELOCATE ALL OBSTRUCTIONS WITHIN THE STREET RIGHT-OF-WAY AS DIRECTED BY THE CITY ENGINEER.
4. ALL STREETS HAVE BEEN DESIGNED USING A MINIMUM "R" VALUE AS STATED IN THE SOILS REPORT. SEE STRUCTURAL SECTIONS FOR EACH STREET FOR SPECIFIC INFORMATION. SHOULD FURTHER TESTING SHOW A LOWER "R" VALUE OF THE ACTUAL IN PLACE MATERIAL, STREETS SHALL BE REDESIGNED ACCORDING TO THE LOWER "R" VALUE, IN ACCORDANCE WITH CITY ENGINEER.
5. RELATIVE COMPACTION OF NOT LESS THAN 95% SHALL BE OBTAINED FOR A MINIMUM DEPTH (T) OF 1.1 FOOT BELOW FINISH GRADE ON LOCAL STREETS (T=1.5' TO 2.5' AS DIRECTED BY THE PUBLIC WORKS DIRECTOR ON COLLECTOR AND ARTERIAL HIGHWAYS) FROM LIP OF GUTTER TO LIP OF GUTTER. IN ADDITION, RELATIVE COMPACTION OF NOT LESS THAN 90% SHALL BE OBTAINED FOR A MINIMUM DEPTH OF 0.5 FEET BELOW GRADING PLANE FOR THE ENTIRE WIDTH OF PAVEMENT (LIP OF GUTTER TO LIP OF GUTTER).
6. THE CONTRACTOR SHALL OBTAIN 90% RELATIVE COMPACTION UNDERNEATH THE SIDEWALK AND CURB AND GUTTER TO A DEPTH OF 6". THE LOCATION OF THE TESTS SHALL BE DETERMINED BY THE CITY.
7. COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE CITY ENGINEER. THE COST OF RETESTING DUE TO FAILED COMPACTION TESTS WILL BE BACKCHARGED TO THE CONTRACTOR.
8. ALL CONCRETE SHALL BE CLASS 3 AND SHALL CONTAIN A MINIMUM OF 505 LBS./CU. YD. OF CEMENT AND HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.50.
9. ASPHALT REJUVENATING AGENT SHALL BE APPLIED TO NEW ASPHALT CONCRETE PAVEMENT IN ACCORDANCE WITH THE PROVISIONS FOR FOG SEAL IN SECTION 37, BITUMINOUS SEALS, OF THE STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CURRENT EDITION, AND THE STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIAL PROVISIONS CURRENTLY IN EFFECT, AS DIRECTED BY THE CITY ENGINEER.
10. NEW STREETS SHALL BE EXTENDED AT INTERSECTIONS AS DIRECTED BY THE PUBLIC WORKS DIRECTOR IN ORDER TO PROVIDE A TIE INTO EXISTING STREET PAVEMENT.
11. SEWER LATERAL LOCATIONS TO BE STAMPED (S) INTO THE CURB FACE OVER EACH LATERAL.
12. ELEVATIONS AND GRADES SHOWN ON THE PROFILES ARE GUTTER FLOW LINES (INVERTS).
13. THE CONTRACTOR SHALL INSTALL PERMANENT TRAFFIC CONTROL SIGNING AND OTHER SAFETY DEVICES (NOT SHOWN ON THESE PLANS) TO MEET WITH THE APPROVAL OF THE CITY PUBLIC WORKS DIRECTOR. THE PRICE FOR THIS ITEM SHALL BE INCLUDED IN THE PAVEMENT PRICE.
14. SIGN PANELS SHALL BE MOUNTED ON POSTS WITH HAWKINS M2G SERIES BOLT AND VANDAL PROOF NUT ASSEMBLY OR EQUAL, ROADSIDE SIGNS INSTALLED PER CITY STANDARD DETAIL T-19 SHALL BE LOCATED WITHIN SIDEWALK, 6" FROM BACK.
15. CONTRACTOR SHALL INSTALL BLUE MARKERS IN THE STREET AT THE FIRE HYDRANTS PER THE FIRE DEPARTMENT REQUIREMENTS.
16. SEE WATER AND TRAFFIC SIGNAL PLANS (BY OTHERS) FOR OTHER IMPROVEMENTS THAT ARE A PART OF THIS PROJECT.
17. ANY WORK CONNECTING TO EXISTING PUBLIC FACILITIES FROM PRIVATE PROPERTY WILL REQUIRE AN ENGINEER'S ESTIMATE FOR THE WORK IN THE EXISTING PUBLIC RIGHT-OF-WAY TO ESTABLISH THE NECESSARY DEPOSIT FOR A STREET PERMIT. (FOR TRACTS WITH PRIVATE STREETS, PARCEL MAP IMPROVEMENTS, OR PUBLIC TRACTS WITHOUT RECORDED MAPS)
18. NOTE FOR 95% COMPACTION FULL PAVEMENT SECTION TO AT LEAST 1.0 FT. UNDER AND EACH SIDE OF XGUTTERS AND COMMERCIAL DRIVE APPROACHES
19. PRIOR TO PAVING THE DESIGN ENGINEER FOR THE PROJECT SHALL VERIFY THAT CONDITIONS REMAIN THE SAME AS SHOWN IN THE APPROVED PLANS. SHOULD CONDITIONS BE CHANGED, A REVISED PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL 10 DAYS PRIOR TO PAVING.
20. LUMINAIRES SHALL BE SOLID STATE LIGHT EMITTING DIODE WITH TWIST LOCK PHOTOCELL (ORIENTED NORTH) AND SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE CURRENT CITY OF BAKERSFIELD LED STREET LIGHTING SPECIFICATIONS
21. ANY ITEMS IN PUBLIC RIGHT-OF-WAY THAT ARE DAMAGED OR DO NOT MEET CURRENT STANDARDS SET BY PUBLIC WORKS WILL REQUIRE REPAIRING AND/OR UPGRADING AS PER CITY ENGINEER.
22. WITH THE EXCEPTION OF THOSE ON RETURNS, STREET SIGNS AND STREET LIGHTS SHALL BE INSTALLED AT THE EXTENSION OF THE NEAREST LOT LINE TO WHERE THEY ARE SHOWN HEREIN.
23. MAXIMUM SLOPE RATIO FROM BACK OF SIDEWALK TO FACE OF,WAN OR STRUCTURE SHALL BE 4: 1, EXCEPT FOR TWO FEET BEHIND THE SIDEWALK WHERE THE MAXIMUM SLOPE SHALL BE 2%. ALTERNATIVELY, THE CITY ENGINEER MAY APPROVE CURBING BEHIND THE SIDEWALK OR OTHER METHOD TO PREVENT EROSION ONTO THE SIDEWALK.

COB ASPHALT CONCRETE PAVING SPECIFICATIONS

1. ASPHALT CONCRETE SHALL BE TYPE A (MODIFIED) FOR ALL ARTERIAL AND COLLECTOR STREETS AND TYPE B (MODIFIED) FOR LOCAL STREETS AND SHALL CONFORM TO THE PROVISIONS IN SECTION 39, "ASPHALT CONCRETE," OF THE CAL TRANS STANDARD SPECIFICATIONS AND THESE SPECIAL PROVISIONS.
2. PRIOR TO THE ADDITION OF ASPHALT BINDER, THE COMBINED MINERAL AGGREGATE FOR TYPE A (MODIFIED) OR TYPE B (MODIFIED) ASPHALT CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 39-2.02, "AGGREGATE," OF THE STANDARD SPECIFICATIONS FOR 3/4" MAXIMUM, MEDIUM GRADING.
3. ASPHALT BINDER FOR TYPE A (MODIFIED) ASPHALT CONCRETE AND TYPE B (MODIFIED) ASPHALT CONCRETE SHALL BE PG 64-10 PERFORMANCE GRADED ASPHALT, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER. THE ASPHALT BINDER SHALL CONFORM TO THE REQUIREMENTS IN THE TABLE FOR PERFORMANCE GRADED ASPHALT BINDER, IN SECTION 92-1.02(B), "GRADES," OF THE STANDARD SPECIFICATIONS.
4. THE AMOUNT OF ASPHALT BINDER TO BE MIXED WITH THE MINERAL AGGREGATE SHALL BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH CALIFORNIA TEST METHOD 367 USING SAMPLES OF MATERIALS PROPOSED FOR USE IN THE WORK. THE AMOUNT OF ASPHALT BINDER SHALL BE APPROVED BY THE CITY ENGINEER.
5. AT LEAST 14 DAYS PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING FOR THE CITY ENGINEER'S REVIEW AND APPROVAL:
   A. A LIST OF AGGREGATE AND ASPHALT SOURCES.
   B. DOCUMENTATION VERIFYING THAT THE AGGREGATES TO BE INCORPORATED IN THE WORK CONFORM TO THE REQUIREMENTS OF SECTION 39-2.02, "AGGREGATE," OF THE STANDARD SPECIFICATIONS AND THESE SPECIAL PROVISIONS. MATERIAL SIEVE ANALYSIS AND SAND EQUIVALENT TEST RESULTS SHOULD NOT BE OLDER THAN SIX (6) MONTHS. ALL OTHER TEST RESULTS SHOULD NOT BE OLDER THAN ONE (1) YEAR.
   C. AN ASPHALT CONCRETE MIX DESIGN DETERMINED IN ACCORDANCE WITH CALIFORNIA TEST 367. LABORATORY TEST RESULTS ON WHICH THE DESIGN IS BASED SHALL BE SUBMITTED WITH THE MIX DESIGN ALONG WITH THE THEORETICAL MAXIMUM DENSITY OF THE DESIGN MIXTURE AS DETERMINED BY ASTM D2041. THE ASPHALT CONCRETE MIX SHALL MEET THE REQUIREMENTS OF SECTION 39-2.02, "AGGREGATE," OF THE STANDARD SPECIFICATIONS AND THESE SPECIAL PROVISIONS. IF THE DATA SUBMITTED SHOWS THAT THE MATERIALS ARE SUBSTANTIALLY THE SAME AS WHEN THE DESIGN WAS PREPARED, THE DESIGN MAY BE UP TO THREE (3) YEARS OLD. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH THE ASPHALT CONCRETE MIX DESIGN.
6. WHERE NEW ASPHALT CONCRETE PAVEMENT IS TO CONFORM TO EXISTING PAVED SURFACES, THE EXISTING PAVEMENT IS TO BE SAW CUT IN A NEAT STRAIGHT LINE, EITHER PARALLEL OR PERPENDICULAR TO THE CENTERLINE OF THE STREET, AND AT A MINIMUM DISTANCE OF ONE (1) FOOT FROM THE EXISTING EDGE OF PAVEMENT.
7. A PRIME COAT WILL NOT BE REQUIRED ON NON-PAVED AREAS TO BE SURFACED PRIOR TO THE PLACEMENT OF ASPHALT CONCRETE; HOWEVER, ALL OTHER REQUIREMENTS OF SECTION 39-4.01, "SUBGRADE," OF THE STANDARD SPECIFICATIONS SHALL BE MET.
8. THE AREA TO WHICH PAINT BINDER HAS BEEN APPLIED SHALL BE CLOSED TO PUBLIC TRAFFIC. CARE SHALL BE TAKEN TO AVOID TRACKING BINDER MATERIAL ONTO THE EXISTING PAVEMENT SURFACE BEYOND THE LIMITS OF CONSTRUCTION.
9. PAVING JOINTS SHALL MATCH STRIPE LOCATIONS UNLESS OTHERWISE PERMITTED BY THE CITY ENGINEER.
10. INTERSECTIONS AND TAPERED SHOULDERS SHALL BE SURFACED AS DIRECTED BY THE CITY ENGINEER. ADDITIONAL ASPHALT CONCRETE SHALL BE PLACED AT ROAD CONNECTIONS AND PRIVATE DRIVES, WHERE SHOWN ON THE PLANS AND AS DIRECTED BY THE CITY ENGINEER, AND HAND RAKED, IF NECESSARY, AND COMPACTED TO FORM SMOOTH, TAPERED CONNECTIONS.
11. WHERE THE COMPACTED THICKNESS OF A LAYER OF ASPHALT CONCRETE IS 0.15 FOOT OR LESS, PAVING OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER THAT, AT THE END OF EACH WORK SHIFT, THE LENGTH OF PAVEMENT ALONG THE LONGITUDINAL DROP-OFF BETWEEN ADJACENT LANES IS NOT GREATER THAN THAT WHICH CAN BE SURFACED DURING THE FOLLOWING SHIFT OF NORMAL PAVING OPERATIONS. ADDITIONAL ASPHALT CONCRETE SHALL BE PLACED ALONG THE TRANSVERSE DROP-OFFS ON EACH LANE. SUCH ADDITIONAL ASPHALT CONCRETE SHALL BE HAND RAKED AND COMPACTED TO FORM TEMPORARY CONFORMS BEFORE THE LANES ARE OPENED TO PUBLIC TRAFFIC. KRAFT PAPER, OR OTHER APPROVED BOND BREAKER, MAY BE PLACED UNDER THE CONFORMS TO FACILITATE THE REMOVAL OF THE CONFORMS WHEN PAVING OPERATIONS RESUME.
12. WHERE THE COMPACTED THICKNESS OF A LAYER OF ASPHALT CONCRETE IS MORE THAN 0.15 FOOT, PAVING OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER THAT THE LAYER OF ASPHALT CONCRETE IS PLACED ON ALL CONTIGUOUS LANES OF THE TRAVELED WAY BEFORE THE LANES ARE OPENED TO PUBLIC TRAFFIC. AT THE END OF EACH WORK SHIFT, THE DISTANCE BETWEEN THE ENDS OF A LAYER OF ASPHALT CONCRETE ON ADJACENT LANES SHALL NOT BE GREATER THAN 10 FEET. ADDITIONAL ASPHALT CONCRETE SHALL BE PLACED ALONG THE TRANSVERSE DROP-OFFS ON EACH LANE AND ALONG THE LONGITUDINAL DROP-OFF BETWEEN ADJACENT LANES. SUCH ADDITIONAL ASPHALT CONCRETE SHALL BE HAND RAKED AND COMPACTED TO FORM TEMPORARY CONFORMS BEFORE THE LANES ARE OPENED TO PUBLIC TRAFFIC. KRAFT PAPER, OR OTHER APPROVED BOND BREAKER, MAY BE PLACED UNDER THE CONFORMS TO FACILITATE THE REMOVAL OF THE CONFORMS WHEN PAVING OPERATIONS RESUME.
13. ASPHALT CONCRETE SHALL BE COMPACTED TO A MINIMUM 92 PERCENT OF THE MAXIMUM THEORETICAL DENSITY AS DETERMINED BY ASTM D-2041. IN-PLACE DENSITY SHALL BE DETERMINED IN ACCORDANCE WITH CALIFORNIA TEST 375.
14. IF THE IN-PLACE DENSITY OF ANY LOT OF ASPHALT CONCRETE IS LESS THAN 92 PERCENT OR GREATER THAN 94 PERCENT OF THE MAXIMUM THEORETICAL DENSITY, THE CONTRACTOR WILL BE ADVISED THAT THE REQUIRED RELATIVE COMPACTION IS NOT BEING ATTAINED AND THAT THE MATERIALS OR PROCEDURES OR BOTH, IF NEEDED, NEED ADJUSTMENT. ASPHALT CONCRETE SPREADING OPERATIONS SHALL NOT CONTINUE UNTIL THE CONTRACTOR HAS NOTIFIED THE CITY ENGINEER OF THE ADJUSTMENT THAT WILL BE MADE IN ORDER TO MEET THE REQUIRED COMPACTION. IF ANY SUCCESSIVE TEST AFTER NOTICE IS GIVEN DOES NOT MEET THE SPECIFIED RANGE, THE ASPHALT CONCRETE REPRESENTED BY THAT LOT SHALL BE REMOVED AND REPLACED WITH MATERIAL THAT MEETS THE IN-PLACE DENSITY REQUIREMENTS.
15. IF THE TEST RESULTS FOR ANY LOT OF ASPHALT CONCRETE INDICATE THAT THE RELATIVE COMPACTION IS EITHER LESS THAN 90% OR MORE THAN 96%, THE ASPHALT CONCRETE REPRESENTED BY THAT LOT SHALL BE REMOVED AND REPLACED WITH MATERIAL THAT DOES MEET THE IN-PLACE DENSITY REQUIREMENT. THE CORRECTIVE WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
16. THE FIELD DENSITY OF COMPACTED ASPHALT CONCRETE SHALL BE DETERMINED BY:
   A. A PROPERLY CALIBRATED NUCLEAR ASPHALT TESTING DEVICE IN THE FIELD, OR
   B. ASTM D1188 WHEN SLABS OR CORES ARE TAKEN FOR LABORATORY TESTING. ZINC STEARATE MAY BE SUBSTITUTED WITH PARAFFIN.
   C. IN CASE OF DISPUTE, METHOD "B" SHALL BE USED.
17. IF THE FINISHED SURFACE OF THE ASPHALT CONCRETE DOES NOT MEET THE SPECIFIED SURFACE TOLERANCES, IT SHALL BE BROUGHT WITHIN TOLERANCE BY EITHER: (1) ABRASIVE GRINDING WITH EQUIPMENT UTILIZING DIAMOND BLADES, (2) REMOVAL AND REPLACEMENT, OR (3) PLACEMENT OF AN ASPHALT CONCRETE OVERLAY. THE METHOD WILL BE SELECTED BY THE CITY ENGINEER. THE CORRECTIVE WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
18. IF ABRASIVE GRINDING IS USED TO BRING THE FINISHED SURFACE TO SPECIFIED SURFACE TOLERANCES, ADDITIONAL GRINDING SHALL BE PERFORMED, AS NECESSARY, TO ENLARGE THE GRINDING AREA SO THAT THE LONGITUDINAL LIMITS OF GRINDING ARE AT A CONSTANT OFFSET FROM, AND ARE PARALLEL TO, THE NEAREST LANE LINE OR PAVEMENT EDGE, AND THE TRANSVERSE LIMITS OF GRINDING ARE NORMAL TO THE PAVEMENT CENTERLINE. ALL GROUND AREAS SHALL BE NEAT RECTANGULAR AREAS OF UNIFORM SURFACE APPEARANCE. ABRASIVE GRINDING SHALL CONFORM TO THE REQUIREMENTS IN THE FIRST PARAGRAPH AND THE LAST FOUR PARAGRAPHS OF SECTION 42-2.02, "CONSTRUCTION," OF THE STANDARD SPECIFICATIONS. A FOG SEAL COAT SHALL BE APPLIED TO ALL FINISHED ASPHALT SURFACES AT THE CONTRACTOR'S EXPENSE. THE FOG SEAL COAT SHALL BE EITHER ASPHALT REJUVENATING AGENT OR ASPHALTIC EMULSION AS DIRECTED BY THE CITY ENGINEER.
19. BASE MATERIAL IN ALL CITY STREETS INCLUDING ARTERIAL, COLLECTOR, AND LOCAL ROADBEDS SHALL EITHER MEET THE SPECIFICATIONS FOR CLASS 2 AGGREGATE BASE (CL 2 AB) CONFORMING TO SECTION 26 OF THE CALTRANS STANDARD SPECIFICATIONS, LATEST EDITION, OR SHALL BE FINE GRADATION CRUSHED MISCELLANEOUS BASE (CMB) CONFORMING TO SECTION 200-2.4 OF THE "GREENBOOK" WHICH ALLOWS UP TO 50% OF THE VOLUME TO BE RECLAIMED ASPHALT CONCRETE, PORTLAND CEMENT CONCRETE, LEAN CONCRETE BASE, CEMENT TREATED BASE, OR A COMBINATION OF THOSE MATERIALS – OTHER RECYCLED BASES SHALL NOT BE ALLOWED. AGGREGATE BASE SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY.
20. THE PAVING CONTRACTOR SHALL GRADE THE PAVING AREAS TO THE FOLLOWING MODIFIED CALTRANS STANDARD SPECIFICATION SECTION 19-1.03 PER THE CITY OF BAKERSFIELD:

    IMMEDIATELY PRIOR TO PLACING SUBSEQUENT LAYERS OF MATERIAL THEREON, THE GRADING PLANE SHALL CONFORM TO ONE OF THE FOLLOWING:

    A. WHEN ASPHALT CONCRETE OR ASPHALT CONCRETE BASE IS TO BE PLACED ON THE GRADING PLANE, THE GRADING PLANE AT ANY POINT SHALL NOT VARY MORE THAN 0.02 FOOT ABOVE OR BELOW THE GRADE ESTABLISHED BY THE ENGINEER.
    B. WHEN SUBBASE OR BASE MATERIAL (OTHER THAN ASPHALT CONCRETE BASE) IS TO BE PLACED ON THE GRADING PLANE, THE GRADING PLANE AT ANY POINT SHALL NOT VARY MORE THAN 0.04 FOOT ABOVE OR BELOW THE GRADE ESTABLISHED BY THE ENGINEER.

SOILS REPORT SPECIFICATION

1. ALL GRADING AND SITE PREPARATION SHALL CONFORM TO THIS PLAN, APPENDIX J OF CALIFORNIA BUILDING CODE AS MODIFIED BY CITY OF BAKERSFIELD ORDINANCE NO. 4472, AND THE GEOTECHNICAL INVESTIGATION PREPARED BY SOILS ENGINEERING, INC., DATED AUGUST 24, 2016, SEI FILE NO. 16-15873 AND ANY ADDENDUM THERETO. THESE DOCUMENTS SHALL BE MADE A PART HEREOF.

CITY STANDARD PLATES

1. THE FOLLOWING CITY OF BAKERSFIELD STANDARD DRAWINGS SHALL BE CONSIDERED A PART OF THESE PLANS. (CONTRACTOR TO OBTAIN LATEST EDITION, 10-26-89, UNLESS OTHERWISE NOTED)

	CITY STD. NO.	DESCRIPTION
*☒	ST-1	CURB AND GUTTER (TYPE "A","B" AND "C")
☐	ST-2	COMMERCIAL DRIVEWAY
*☒	ST-3 DATED 10/15	COMMERCIAL/MULTI-FAMILY DRIVE APPROACH
☐	ST-4	RESIDENCE DRIVEWAY
*☒	ST-5 DATED 10/15	COMBINATION SIDEWALK
☐	ST-6 DATED 1/11/99	PAVEMENT PATCHES
☐	ST-7	CROSS-GUTTERS
☐	ST-8	26 INCH PART CIRCLE CULVERT
☒	ST-9	STREET SPECIFICATIONS
☒	ST-10	STREET SECTIONS
☐	ST-10A	STREET SECTIONS
*☒	ST-11 DATED 6/99	STANDARD PAVEMENT PATCHES
*☒	ST-12 DATED 6/99	STANDARD TRENCH BACKFILL COMPACTION
☒	ST-13	SURVEY MONUMENT
☒	ST-14	**STREET LIGHT, MAST ARM TYPE
☐	ST-15	CUL-DE-SACS
☐	ST-16	STREET KNUCKLE
☐	ST-17	WIDE CROSS-GUTTER
☐	ST-2 DATED 6/2/99	MEDIAN CURBS (TYPE "M","M-1" AND "M-2")
☐	ST-19	HANDICAP RAMPS
☐	ST-20	PRIVATE STREET GATES
☐	ST-21	REFUSE CONTAINER PAD
☒	ST-22 DATED 1/11/99	TRENCH BACKFILL AND COMPACTION REQUIREMENTS
☐	D-10	SIDEWALK UNDERDRAIN
☒	D-11	DRAINAGE BASIN
*☒	D-14 DATED 6/99	CATCH-BASIN, TYPE "A"
☐	D-15	CATCH-BASIN, TYPE "A-1"
☒	D-16	GUTTER DEPRESSIONS
☐	SW-4	MANHOLE, TYPE "A" WITH DROP CONNECTION
☒	SW-5	FRAMES & COVER FOR MANHOLES & CLEANOUTS
☒	T-1	STREET SIGN, POST TYPE
☐	T-3	MAJOR COLLECTOR TRANSITION
☐	T-12	MINIMUM ACCESS DESIGN
☐	T-34 DATED 09/99	TRAFFIC SIGNAL INTERCONNECT – WIRING AND PULL BOXES

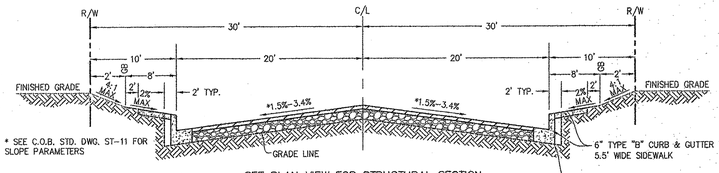
**FIBERGLASS STREET LIGHTS NOT ALLOWED

CALTRANS STANDARD PLANS & SPECIFICATIONS

1. THE FOLLOWING CALTRANS STANDARD PLANS SHALL BE CONSIDERED A PART OF THESE PLANS. (CONTRACTOR TO OBTAIN LATEST EDITION THEREOF)

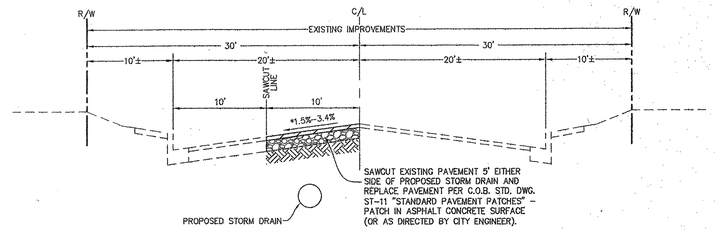
CALTRANS STD. PLAN	DESCRIPTION
*☒ RSP A88A & B (2006 EDITION)	CURB RAMP DETAILS

* SEE DETAILS ON SHEET C4.05



SEE PLAN VIEW FOR STRUCTURAL SECTION

60' RIGHT-OF-WAY
TYPICAL CROSS SECTION
(A) MARDI GRAS COURT – CITADEL STREET
NOT TO SCALE



60' RIGHT-OF-WAY
EXISTING CROSS SECTION
(B) CITADEL STREET
NOT TO SCALE

C.O.B. RECORDS. NO.

J:\3014\Improvements\City Approval\Street Plans\dwg\3014-ST_Front Sheet.dwg

PORTER & ASSOCIATES, INC.
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Rev/Date:	Revision:	Description:

Sheet Title: STREET IMPROVEMENT PLANS
GENERAL NOTES - DETAILS

Project Name & Address:
NEW ELEMENTARY SCHOOL
INCREMENT 1
BAKERS

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TYPE "B" 6" CURB & GUTTER PER C.O.B. STD. DWG. ST-1 (DATED 6/2/99)
2. CONSTRUCT 5.5' WIDE COMBINATION TYPE SIDEWALK PER C.O.B. STD. DWG. ST-5 (DATED 10/15)
3. CONSTRUCT WHEELCHAIR RAMP PER CALTRANS 2006 REVISED STANDARD PLAN A88A CASE "A".
4. CONSTRUCT TYPE 'A' CATCH BASIN PER C.O.B. STD. DWG. NO. D-14 (DATED 6/2/99)
5. CONSTRUCT STANDARD COMMERCIAL DRIVE APPROACH PER C.O.B. STD. DWG. NO. ST-3 (DATED 10/15)
6. SAWCUT TO NEAT, CLEAN VERTICAL FACE AND PATCH BACK PER C.O.B. STD. DWG. ST-11 (DATED 6/2/99) THE EXACT LOCATION OF SAWCUT SHALL BE DETERMINED BY CITY OF BAKERSFIELD ENGINEER.
7. INSTALL (2) 4" SCH 40 PVC BLANK CONDUITS FOR LANDSCAPING PURPOSES (30" COVER, MINIMUM)

INSTALL NEW 1 POST SIGN, SIGN CODES ARE FEDERAL CODES UNLESS OTHERWISE INDICATED BY (CA). (CA) INDICATES CALIFORNIA CODES.

FL = FLOWLINE STATION

ALL PLAN VIEW STATIONING IS BASED ON CENTERLINE DATA UNLESS OTHERWISE NOTED.
ALL PROFILE STATIONING IS BASED ON FLOWLINE DATA UNLESS OTHERWISE NOTED.

ADJUST ALL EXISTING MANHOLES, CLEANOUTS, VALVE COVERS, MONUMENT ENCASEMENTS, ETC. TO FINISHED GRADE PER CITY STANDARDS.

- XXX — INSTALL 5,800 LUMEN STREET LIGHT PER C.O.B. STD. DWG. ST-23 THRU 26 AND C.O.B. SPECIAL PROVISION SECTION 86-6.01 LIGHT EMITTING DIODE (LED) LUMINARIES. MODELS INCLUDE HOLOPHANE LVJI SERIES, LEO TEK GCI SERIES, CREE XSP SERIES OR EQUIVALENT AS APPROVED BY CITY ENGINEER.
- FOUND MONUMENT AS DESCRIBED.
- CONSTRUCT SURVEY MONUMENT ENCASEMENT PER C.O.B. STD. DWG. ST-22.
- FD 2" I.P. W/TAG MKD "7-20-65 KCS" PER K.C.S.F.B. 710, PG. 55. REPLACE WITH CONC. MON. SURVEYOR OF RECORD SHALL FILE CORNER RECORD WITH COUNT OF KERN.
- PROPOSED SEWER MANHOLE (SEE SEWER AND STORM DRAIN PLANS)
- PROPOSED STORM DRAIN MANHOLE (SEE SEWER AND STORM DRAIN PLANS)
- EXISTING RIGHT-OF-WAY (PER PARCEL MAP 12062-1)
- PROPOSED SEWER MAIN (SEE SEWER AND STORM DRAIN PLANS)
- PROPOSED STORM DRAIN (SEE SEWER AND STORM DRAIN PLANS)
- EXISTING EDGE OF PAVEMENT
- PROPOSED WATER MAIN (SEE CAL-WATER PLANS)
- PROPOSED FIRE HYDRANT (SEE CAL-WATER PLANS)
- PROPERTY LINE

SIGN CODES

R1-1 ~ STOP SIGN
R30A(CA) ~ NO PARKING
S1-1 ~ SCHOOL CROSSWALK WARNING
W16-9P ~ AHEAD

NOTE: SIGN CODES ARE FEDERAL CODES UNLESS OTHERWISE INDICATED BY (CA). (CA) INDICATES CALIFORNIA CODES.

SIGN LEGEND

- INSTALL NEW 1 POST SIGN PER CO.B. STD. DWG. T-1
- PROPOSED SIGN LOCATION

CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA	TANGENT
C1	35.00'	55.40'	90°41'06"	35.42'
C2	84.00'	195.15'	133°06'44"	193.71'
C3	20.00'	38.40'	110°00'03"	28.56'
C4	20.00'	31.42'	90°00'00"	20.00'
C5	520.00'	35.66'	3°55'44"	17.84'
C6	500.00'	34.29'	3°55'44"	17.15'
C7	480.00'	32.92'	3°55'44"	16.46'

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Revision:	Revision Description:	Rev. Date:
Revision:	Revision Description:	Rev. Date:

Sheet Title: STREET IMPROVEMENT PLANS
MARDI GRAS COURT

Project Name & Address: NEW ELEMENTARY SCHOOL #17 INCREMENT 1
BAKERSFIELD CITY SCHOOL DISTRICT
MARDI GRAS COURT - CITADEL STREET

Issue Date: Date: 3/12/2018 Designer: — DR: — PC: LGH

Agency Approval Stamp:
FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
AC FLS SS TN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):
REGISTERED PROFESSIONAL ENGINEER FRED W. PORTER RCE 33448 CIVIL STATE OF CALIFORNIA
LICENSED ARCHITECT CHRIS E. ELVIN No. C-30986 8-31-18 STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C1.03

Release: -

NATE SLINKARD

C.O.B. RECORDS NO.

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CONSTRUCTION SPECIFICATIONS

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- FOUND MONUMENT AS DESCRIBED.
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- FD 2" I.P. W/TAG MKD "7-20-65 KCS" PER K.C.S.F.B. 710, PG. 55. REPLACE WITH CONC. MON. SURVEYOR OF RECORD SHALL FILE CORNER RECORD WITH COUNT OF KERN.
- Ⓢ — PROPOSED SEWER MANHOLE (SEE SEWER AND STORM DRAIN PLANS)
- Ⓓ — PROPOSED STORM DRAIN MANHOLE (SEE SEWER AND STORM DRAIN PLANS)
- EXISTING RIGHT-OF-WAY (PER PARCEL MAP 12062-1)
- -S- — PROPOSED SEWER MAIN (SEE SEWER AND STORM DRAIN PLANS)
- PROPOSED STORM DRAIN (SEE SEWER AND STORM DRAIN PLANS)
- EXISTING EDGE OF PAVEMENT
- -W- — PROPOSED WATER MAIN (SEE CAL-WATER PLANS)
- PROPOSED FIRE HYDRANT (SEE CAL-WATER PLANS)
- PROPERTY LINE

SIGN CODES

R1-1 ~ STOP SIGN
R30A(CA) ~ NO PARKING
S1-1 ~ SCHOOL CROSSWALK WARNING
W16-9P ~ AHEAD

NOTE: SIGN CODES ARE FEDERAL CODES UNLESS OTHERWISE INDICATED BY (CA). (CA) INDICATES CALIFORNIA CODES.

SIGN LEGEND

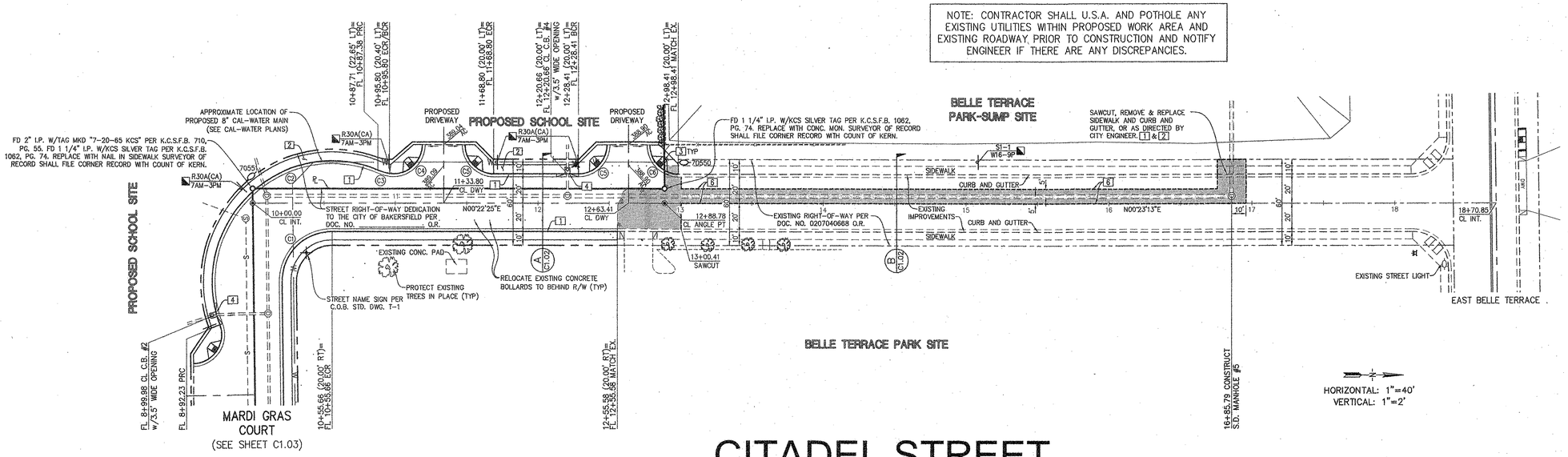
- INSTALL NEW 1 POST SIGN PER CO.B. STD. DWG. T-1
- PROPOSED SIGN LOCATION

CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C1	35.00'	55.40'	90°41'06"	35.42'
C2	84.00'	195.15'	133°06'44"	193.71'
C3	35.00'	8.42'	13°46'49"	4.23'
C4	20.00'	34.43'	98°38'46"	23.27'
C5	20.00'	31.42'	90°00'00"	20.00'
C6	20.00'	31.41'	89°59'12"	20.00'

THE ABOVE DRAWINGS AND SPECIFICATIONS, AND IDEAS, DESIGNS, AND ARRANGEMENTS REPRESENTED THEREIN, ARE AND SHALL REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE USED, DISCLOSED TO OTHERS, OR USED IN CONNECTION WITH ANY WORK OR PROJECT OTHER THAN THE SPECIFIC PROJECT FOR WHICH THEY HAVE BEEN PREPARED AND DEVELOPED, WITHOUT THE WRITTEN CONSENT OF THE ENGINEER. VISUAL CONTACT WITH THESE DRAWINGS AND SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS. WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS. SHOP DETAILS MUST BE SUBMITTED TO THIS OFFICE FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION.

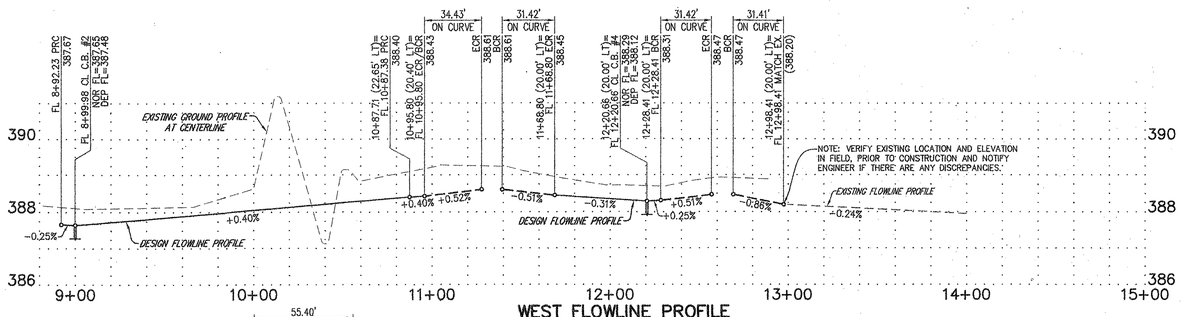
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ENGINEERING & SURVEYING
1200 21st Street, Bakersfield, California 93301
661.327.0362 FAX 661.327.1065

NOTE: CONTRACTOR SHALL U.S.A. AND POTHOLE ANY EXISTING UTILITIES WITHIN PROPOSED WORK AREA AND EXISTING ROADWAY, PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.

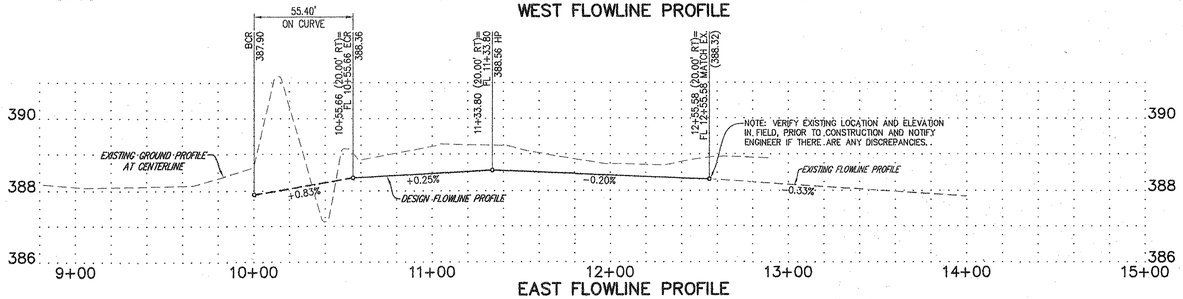


CITADEL STREET

CONSTRUCT MIN. 0.30' A.C. PAVING OVER
MIN. 0.40' CL-II AGGREGATE BASE OVER MIN. 1.00' NAT. GRD.
COMPACTED TO 95% MAX. DENSITY
TI=6.0 R=50



WEST FLOWLINE PROFILE



EAST FLOWLINE PROFILE

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www.integratedddesigns.com

Revision: / Revision Description: / Rev. Date:

Sheet Title: STREET IMPROVEMENT PLANS
CITADEL STREET

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 1
BAKERSFIELD CITY SCHOOL DISTRICT
MARDI GRAS COURT - CITADEL STREET

Issue Date: Date: 3/12/2018
Designer: --- DR: LGH PIC:

Agency Approval Stamp:

FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
AC FLS SS TN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):

REGISTERED PROFESSIONAL ENGINEER — FRED W. PORTER — RCE 33448 — CIVIL — STATE OF CALIFORNIA

LICENSED ARCHITECT — CHRISTINE FINN — NO. C-29068 — REN. 5-31-19 — STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C1.04

Release: -

C.O.B. RECORDS, NO.

J:\3014\Improvements\City Approval\Street Plans\dwg\3014-ST_Plan and Profile.dwg NATE SLINKARD

SEWER AND STORM DRAIN PLANS
PROPOSED SCHOOL SITE
(CITADEL STREET AND MARDI GRAS COURT)
BAKERSFIELD, CALIFORNIA

ENGINEER'S STATEMENT:

THESE PLANS AND SPECIFICATIONS WERE PREPARED BY ME OR UNDER MY DIRECTION, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH CITY OF BAKERSFIELD ORDINANCES, STANDARDS AND DESIGN CRITERIA, AND INCLUDE ALL IMPROVEMENT REQUIREMENTS OF THE ADVISORY AGENCY OR OTHER REVIEW BOARD. ANY ERRORS, OMISSIONS OR OTHER VIOLATIONS OF THOSE ORDINANCES, STANDARDS OR DESIGN CRITERIA ENCOUNTERED DURING CONSTRUCTION SHALL BE CORRECTED AND ALL SUCH CORRECTIONS SHALL BE REFLECTED ON REVISED OR AS-BUILT PLANS TO BE SUBMITTED TO THE CITY ENGINEER.

FRED W. PORTER R.C.E. 33448 — DATE 3-12-18

APPROVED BY:

PUBLIC WORKS DIRECTOR, CITY OF BAKERSFIELD — DATE
NICOLAS FIDLER C 61069

REVIEWED BY:

ASSISTANT PUBLIC WORKS DIRECTOR, CITY OF BAKERSFIELD — DATE

BENCHMARK USED:

TOP OF CONCRETE MONUMENT IN LAMPHOLE AT THE EAST QUARTER CORNER OF SECTION 5, 30/28 M.D.M. LYING 29.45' SOUTH OF THE CENTERLINE INTERSECTION OF EAST BELLE TERRACE AND COTTONWOOD ROAD.

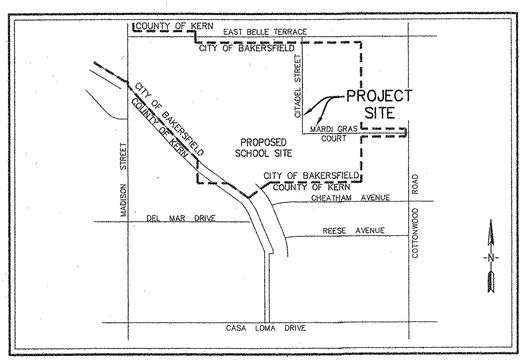
ELEVATION = 385.41 (USGS DATUM) PER TRACT 6378 PLANS

BASIS OF BEARINGS:

THE BEARING OF NORTH 89°41'23" EAST FOR THE NORTH LINE OF THE SOUTHEAST QUARTER OF SECTION 5, T. 30 S., R. 28 E., M.D.B.& M. (ALSO BEING THE CENTERLINE OF EAST BELLE TERRACE) PER RECORD OF SURVEY NO. 3546 FILED IN BOOK 30 OF RECORD OF SURVEYS AT PAGE 100 IN THE OFFICE OF THE KERN COUNTY RECORDER'S OFFICE WAS USED AS THE BASIS OF BEARINGS SHOWN UPON THIS MAP.

LEGAL DESCRIPTION:

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 30 SOUTH, RANGE 28 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE CITY OF BAKERSFIELD, COUNTY OF KERN, STATE OF CALIFORNIA.



VICINITY MAP
NO SCALE

LEGEND

(X)	SHEET INDEX NUMBER
S SS#12	SEWER MANHOLE W/NUMBER
D SD#12	STORM DRAIN MANHOLE W/NUMBER
CB#12	CATCH BASIN W/NUMBER
———	PROPOSED SEWER MAIN
═══	PROPOSED STORM DRAIN
——S———	EXISTING SEWER MAIN
——SD———	EXISTING STORM DRAIN
TMH–	TOP OF MANHOLE ELEVATION
INV.–	PIPE INVERT ELEVATION
(E,S,N,W)–	(EAST, SOUTH, NORTH, WEST)
P.V.C.–	POLYVINYL CHLORIDE
±	= APPROXIMATE LENGTHS, CONTRACTOR SHALL VERIFY ALL LENGTHS PRIOR TO BIDDING THIS PROJECT
R.C.P.–	REINFORCED CONCRETE PIPE
R.G.J.–	RUBBER GASKET JOINT
CB–	CATCH–BASIN

MATERIALS LIST

ESTIMATED QUANTITIES FOR PLAN CHECK AND INSPECTION FEE CALCULATIONS. NOT TO BE USED FOR BIDDING PURPOSES.

SEWER	
8" SEWER MAIN	1,003 LF
8" SEWER MAIN (LATERALS)	32 LF
6" SEWER MAIN (LATERALS)	42 LF
PVC LINED SEWER MANHOLES	1 EA
SEWER MANHOLES	3 EA
TIE–IN(S)	1 EA

STORM DRAIN	
30" R.C.P. STORM DRAIN	562 LF
24" R.C.P. STORM DRAIN	211 LF
18" R.C.P. STORM DRAIN	588 LF
TYPE "A" CATCH BASINS	4 EA
STORM DRAIN MANHOLE	5 EA
OUTLET STRUCTURE	1 EA

SHEET No. INDEX

(C2.01) TITLE SHEET
(C2.02) GENERAL SPECIFICATIONS
(C2.03) MARDI GRAS COURT
(C2.04) CITADEL STREET

OPEN STREET PERMIT NOTE

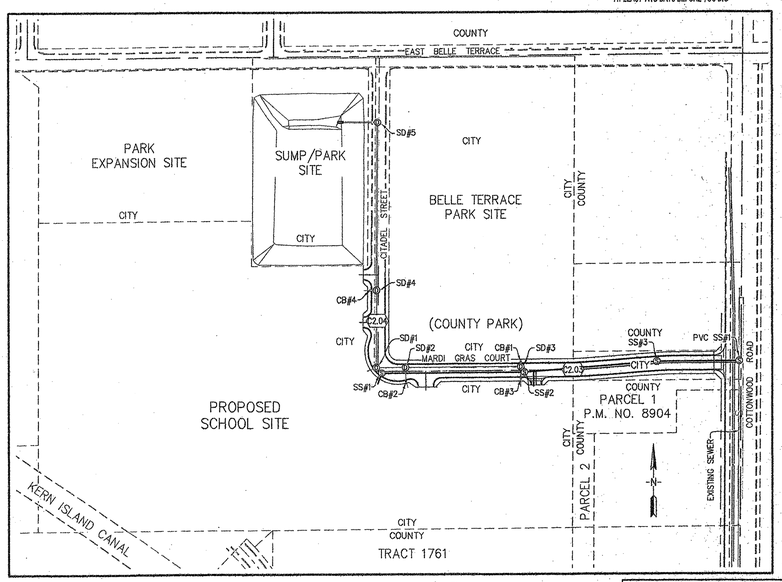
AN OPEN STREET PERMIT SHALL BE OBTAINED FROM THE CITY OF BAKERSFIELD PUBLIC WORKS DEPARTMENT FOR ANY WORK PERFORMED WITHIN EXISTING ACCEPTED STREET RIGHT OF WAY. UNLESS SECURED BY A SUBDIVISION AGREEMENT, SECURITY BASED ON AN APPROVED ENGINEER'S ESTIMATE FOR THE WORK PERFORMED WITHIN RIGHT OF WAY AND INSURANCE AS REQUIRED SHALL BE PROVIDED PRIOR TO ISSUANCE OF A PERMIT.

CITY INSPECTION NOTE

NO CITY INSPECTIONS SHALL BE GIVEN FOR THE WORK IN THIS AREA UNTIL AN ENCROACHMENT PERMIT WITH APPROPRIATE SECURITY AND INSURANCE HAS BEEN OBTAINED.

UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DIAL TOLL FREE 1-800-227-2600 AT LEAST TWO DAYS BEFORE YOU DIG



KEY MAP
SCALE: 1"=200'

C.O.B. RECORDS, NO.

J:\3014\Improvements\City Approval\Sewer-Storm Drain Plans\dwg\3014-SWR_Front Sheet.dwg

NATE SLINKARD

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PORTER & ASSOCIATES, INC.
ENGINEERING & SURVEYING
1200 21st Street, Bakersfield, California 93301
661.327.0362 FAX 661.327.1065

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www.integratedesigns.com

Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: SEWER & STORM DRAIN PLANS
TITLE SHEET

Project Name & Address: INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date: Date: 3/12/2018 Designer: --- DR: LGH CH: -

Agency Approval Stamp:

FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
ACCESS SS TN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):

REGISTERED PROFESSIONAL ENGINEER FRED W. PORTER RCE 33448 CIVIL STATE OF CALIFORNIA

LICENSED ARCHITECT CURTIS E. LEWIS No. 28966 RENEWAL 8-31-19 STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C2.01

Release: -

GENERAL SPECIFICATIONS

1. ALL CONSTRUCTION SHALL CONFORM TO THIS PLAN, THE CALIFORNIA BUILDING CODE, CITY OF BAKERSFIELD ORDINANCE, LATEST EDITION AND STANDARDS PERTAINING THERETO. THESE DOCUMENTS SHALL BE MADE A PART HEREOF.
2. ALL CONSTRUCTION WITHIN THE CITY RIGHT-OF-WAY OR CITY EASEMENTS SHALL BE IN ACCORDANCE WITH CITY OF BAKERSFIELD STANDARDS AND STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED 2010. THESE STANDARDS, DRAWINGS AND DETAILS SHALL BE CONSIDERED A PART OF THESE PLANS AND THE CONTRACTOR SHALL OBTAIN A COPY FOR HIS USE.
3. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS BEFORE START OF CONSTRUCTION. AN OPEN STREET PERMIT SHALL BE OBTAINED FROM THE CITY OF BAKERSFIELD PUBLIC WORKS DEPARTMENT FOR ANY WORK TO BE PERFORMED IN THE EXISTING, ACCEPTED STREET RIGHT-OF-WAY. UNLESS SECURED BY AN IMPROVEMENT AGREEMENT, APPROVED INSURANCE AND SECURITY BASED ON AN APPROVED ENGINEER'S ESTIMATE FOR THE WORK PERFORMED WITHIN THE STREET RIGHT-OF-WAY SHALL BE POSTED PRIOR TO ISSUANCE OF A PERMIT.
4. 24 HOUR NOTICE: PRIOR TO THE START OF ANY PHASE OF CONSTRUCTION, THE CITY CONSTRUCTION INSPECTION SECTION SHALL BE GIVEN AT LEAST 24 HOURS NOTICE. THE SECTION MAY BE NOTIFIED AT (661) 326-3049.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING DIMENSIONS, DATA AND MEASUREMENTS AT THE BUILDING SITE PRIOR TO CONSTRUCTION. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. PORTER & ASSOCIATES, INC. MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.
6. EXISTING UTILITY AND UNDERGROUND LINES HAVE BEEN SHOWN ON THIS PLAN ACCORDING TO AVAILABLE RECORDS. THE ENGINEER IS NOT RESPONSIBLE FOR POSSIBLE ERRORS OR OMISSIONS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF ANY WORK. UNDERGROUND SERVICE ALERT (U.S.A.: 1-800-227-2600) SHALL BE CONTACTED AT LEAST TWO WORKING DAYS PRIOR TO ANY CONSTRUCTION OR EXCAVATION.
7. ANY EXISTING IMPROVEMENTS OR UTILITIES THAT ARE REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE, AS DIRECTED BY THE ENGINEER AND APPROVED BY THE GOVERNING AUTHORITY.
8. IF A PROBLEM OR CONFLICT SHOULD ARISE DURING THE COURSE OF THE PROJECT, IT IS THE RESPONSIBILITY OF THE OWNER OR THE CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY PRIOR TO ANY FURTHER WORK.
9. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND SUPERVISION NECESSARY FOR A COMPLETE AND FUNCTIONAL PRODUCT.
10. ALL WORK WHICH IS DEFECTIVE IN ITS CONSTRUCTION OR DEFICIENT IN ANY OF THE REQUIREMENTS OF THESE DRAWINGS AND SPECIFICATIONS SHALL BE REMEDIED, OR REMOVED AND REPLACED BY THE CONTRACTOR IN AN ACCEPTABLE MANNER, AND NO COMPENSATION WILL BE ALLOWED FOR SUCH CORRECTION.
11. IN THE EVENT CONSTRUCTION STAKING BASED ON THE CONSULTANT'S PLANS, DRAWINGS OR OTHER DOCUMENTS IS ACCOMPLISHED BY ANYONE OTHER THAN THE CONSULTANT, THE OWNER OR CONTRACTOR SHALL NOTIFY THE BUILDING OFFICIAL IN WRITING AS TO THE CHANGE OF ENGINEER IN RESPONSIBLE CHARGE.
12. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT; INCLUDING EROSION, SEDIMENTATION & DUST CONTROL PLAN AND STORM WATER POLLUTION PREVENTION PLAN IMPLEMENTATION AND THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
13. IF THE CONTRACTOR IS IN DOUBT AS TO THE MEANING OF ANY PART OF THE DRAWINGS AND SPECIFICATIONS OR FINDS DISCREPANCIES IN OR OMISSIONS FROM THE DRAWINGS, HE SHALL SUBMIT A WRITTEN REQUEST FOR AN INTERPRETATION OR A CORRECTION THEREOF, PRIOR TO FILING HIS BID PRICE FOR THE PROJECT.
14. PORTER & ASSOCIATES, INC. WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ANY AND ALL CHANGES TO THESE PLANS MUST BE APPROVED IN WRITING BY PORTER & ASSOCIATES, INC.
15. NORMAL STAKING AND MARKING OF THE PROJECT WILL BE SUPPLIED ONLY ONCE. ALL RESTAKING OR REMARKING SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
16. SEE WATER AND STREET IMPROVEMENT PLANS FOR OTHER IMPROVEMENTS THAT ARE PART OF THIS PROJECT.
17. NO PUBLIC WORKS INSPECTIONS WILL BE GIVEN FOR THE WORK IN THE UNDEDICATED ROADWAYS IN THIS PROPERTY UNTIL A SUBDIVISION PERMIT HAS BEEN OBTAINED.
18. NOTE CONTRACTOR SHALL STAMP AND "S" INTO CURB FACE OVER EACH SEWER LATERAL.
19. ANY ITEMS IN PUBLIC RIGHT-OF-WAY THAT ARE DAMAGED OR DO NOT MEET CURRENT STANDARDS SET BY PUBLIC WORKS WILL REQUIRE REPAIRING AND/OR UPGRADING AS PER CITY ENGINEER.

COB SEWER SPECIFICATIONS

1. ALL MATERIALS INSTALLATION SHALL CONFORM TO CHAPTER 1 OF THE CITY OF BAKERSFIELD SUBDIVISION DESIGN MANUAL AND WITH THE RECOMMENDATIONS OF THE MANUFACTURER.
2. ALL PIPE AND FITTINGS SHALL BE MARKED OR STAMPED WITH THE TRADE BRAND NAME OF THE MANUFACTURER, AND STRENGTH OR CLASS OF PIPE.
3. PVC PIPE INSTALLATION:
   A. MATERIALS: PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATIONS D3034 AND SDR-35. PIPE AND FITTINGS SHALL BE HOMOGENEOUS THROUGHOUT AND FREE FROM CRACKS, HOLES, FOREIGN INCLUSIONS OR OTHER INJURIOUS DEFECTS. FITTINGS SHALL BE INJECTION MOLDED AND SHALL BE INSTALLED IN LINE ON NEW PIPELINES; CUT-IN FITTINGS ARE NOT PERMITTED.
   B. JOINTS: USE ONLY ELASTOMERIC GASKET JOINTS. THE ASSEMBLY OF JOINTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE PVC PIPE CONNECTS TO VCP, USE COUPLINGS APPROVED BY THE CITY OF BAKERSFIELD.
   C. INSTALLATION: PIPE AND FITTINGS SHOULD BE INSTALLED IN ACCORDANCE WITH ASTM D2321. ONLY CLASS I OR II EMBEDMENT MATERIALS WILL BE CONSIDERED SUITABLE.
4. FOR CURVED PIPE: IDENTIFICATION TAPE DESIGNED FOR USE ON SEWERS SHALL BE PLACED ON TOP OF SEWER MAIN ALONG ITS ENTIRE LENGTH. IDENTIFICATION TAPE SHALL ALSO BE PLACED ON SEWER LATERALS EXTENDING FROM SEWER MAIN TO RIGHT-OF-WAY LINE.
5. SURFACE MARKERS FOR SEWER LATERALS SHALL BE INSTALLED AT PROPERTY LINE PER C.O.B. STD. SW-1, UNLESS OTHERWISE NOTED ON PLANS.
6. WYE-FITTINGS SHALL BE INJECTION MOLDED IN-LINE AND SHALL BE USED FOR ALL LATERAL CONNECTIONS AND SHALL BE ROTATED A MINIMUM OF 23° AND A MAXIMUM OF 45° ABOVE THE HORIZONTAL PLANE RUNNING THROUGH THE CENTERLINE OF THE MAIN. WYE FITTINGS ONLY SHALL BE USED FOR VCP. ALL SEWER STUBS SHALL BE CLOSED WITH A STANDARD PLASTIC PLUG (SOLVENT WELDED).
7. ALL LATERALS SHALL EXTEND TO A MINIMUM OF FOUR FEET BEYOND THE PROPERTY LINE AND SHALL BE 4" IN DIAMETER EXCEPT AS NOTED ON PLANS.
8. THE MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF BAKERSFIELD DRAWINGS SW-4 AND SW-5 AND SECTION 70-1.02H AND 71-1.07 OF THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, LATEST EDITION.
9. THE CLEANOUTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF BAKERSFIELD STANDARD DRAWINGS SW-6.
10. SYSTEM TESTING:

    INSTALLED PIPE SHALL BE CLEANED AND TESTED IN ACCORDANCE WITH CHAPTER 1.3 OF THE SUBDIVISION DESIGN MANUAL AND WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND ACCEPTABLE TO THE CITY OF BAKERSFIELD. 24 HOURS NOTICE WILL BE REQUIRED FOR TEST AND INSPECTION.

11. PRIOR TO FINAL ACCEPTANCE OF THE SEWER SYSTEM, ALL MAIN LINES SHALL BE INSPECTED WITH VIDEO EQUIPMENT DESIGNED FOR THIS PURPOSE AND AS APPROVED BY THE CITY ENGINEER. THE TELEVISION CAMERA SHALL HAVE THE CAPABILITY OF ROTATING 360°, IN ORDER TO VIEW AND RECORD THE TOP AND SIDES OF THE PIPE, AS REQUIRED. THE VIDEO INSPECTIONS SHALL BE WITNESSED BY CITY'S CONSTRUCTION INSPECTOR, WHO WILL ALSO INITIAL AND DATE THE "CHAIN OF CUSTODY" FORM. THE SUBDIVIDER SHALL IMMEDIATELY NOTIFY CITY OF ANY PIPE LOCATIONS REVEALED TO BE NOT IN COMPLIANCE WITH THE SPECIFICATIONS. A RECORDED VIDEO CASSETTE, THE COMPLETED "CHAIN OF CUSTODY" FORM AND A WRITTEN LOG (WHICH INCLUDES THE STATIONING, BASED ON THE STATIONING OF THE APPROVED PLANS, OF ALL CONNECTED LATERALS) OF THE INSPECTION SHALL BE PROVIDED FOR VIEWING AND SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO ACCEPTANCE. AFTER ACCEPTANCE OF THE SYSTEM, THE VIDEO CASSETTE, FORMS AND LOGS SHALL BECOME THE PROPERTY OF THE CITY.

CONNECTION SEAL TO PVC LINED SEWER LINE OR MANHOLE

1. THE CORED HOLE SHALL BE APPROXIMATELY 3 INCHES GREATER THAN THE OUTSIDE DIAMETER OF THE CONNECTING LINE. THE CORED HOLE SHALL BE DESIGNED TO CUT A HOLE WITH MINIMUM DAMAGE TO THE REINFORCING STEEL, PIPE OR PLASTIC LINER.
2. PRIOR TO THE INSTALLATION OF THE PVC BOOT ON THE CONNECTION, THE PLASTIC LINER AROUND THE PIPE AT THE CORED HOLE SHALL BE CLEANED PER THE PLASTIC LINER MANUFACTURER'S RECOMMENDATION. THE END OF THE CONNECTING LINE SHALL BE SEALED TO THE PVC BOOT WITH SIKA 449/203 PRIMER AND SIKA FLEX 1A SEALANT OR AN APPROVED EQUAL.
3. THE PVC BOOT SHALL BE ORDERED SO IT WILL FIT SNUGGLY TO THE OUTSIDE WALL OF THE CONNECTION.
4. THE PVC BOOT AND WELD STRIPS SHALL BE INSTALLED AND TESTED FOR HOLIDAYS PER THE PLASTIC LINER MANUFACTURER'S RECOMMENDATIONS.
5. THE CONNECTION LINE SHALL BE CENTERED IN THE CORED HOLE AND PLACED SO IT IS FLUSH WITH THE INSIDE WALL OF THE RCP.
6. THE PVC BOOT WELD STRIPS SHALL BE MANUFACTURED BY AMERON, INC. OR AN EQUAL APPROVED BY THE CITY ENGINEER.

COB STORM DRAIN SPECIFICATIONS

1. UNLESS OTHERWISE SPECIFIED ON THESE PLANS, THE STORM DRAIN PIPE SHALL BE THE FOLLOWING:
   A. REINFORCED CONCRETE PIPE (R.C.P): REINFORCED CONCRETE PIPE SHALL BE CLASS III (ASTM C76) AND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 65 OF THE STANDARD SPECIFICATIONS. (SEE GENERAL NOTE 2)
   B. JOINTS SHALL BE RUBBER GASKETED IN CONFORMANCE WITH THE PROVISIONS OF SECTION 65-1.06 OF THE STANDARD SPECIFICATIONS.
   C. CONCRETE PIPE SHALL BE LAID IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 65 OF THE STANDARD SPECIFICATIONS. (SEE GENERAL NOTE 2)
   D. IN ADDITION TO THE ABOVE REQUIREMENTS, ALL RUBBER GASKETED JOINT RINGS SHALL BE CHECKED WITH A GAUGE ALL THE WAY AROUND THE PIPE AFTER THE JOINT HAS BEEN ASSEMBLED TO DETERMINE THAT THE RING HAS BEEN PROPERLY LOCATED AND SEATED. IMPROPERLY MADE JOINTS SHALL BE PULLED APART AND SATISFACTORILY REMADE.

COB TRENCHING SPECIFICATIONS

1. TRENCHING SHALL MEET THE REQUIREMENTS OF CAL-OSHA TRENCHING ORDERS AND THE CONTRACTOR SHALL COMPLY WITH SECTION 6422 OF THE LABOR CODE.
2. ANY TRENCHING TO BE CONDUCTED WITHIN CITY RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED PER CITY OF BAKERSFIELD STANDARD DETAIL ST-22.
3. ALL EXISTING PAVING AND SURFACING REMOVED, DAMAGED OR UNDERCUT SHALL BE REPLACED IN ACCORDANCE WITH THE CITY OF BAKERSFIELD DRAWING ST-6.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING ALL TRENCHES. IF TRENCHES OR PIPING BECOME DAMAGED DUE TO WATER INFILTRATION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR THE TRENCH AND PIPING TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
5. FLOODING OR WATERJETTING SHALL NOT BE USED FOR BACKFILL COMPACTION.
6. CLASS I BEDDING AND EMBANKMENT IS REQUIRED FOR ALL PLASTIC SEWER PIPE WITHIN THE PIPE ZONE. CLASS I BACKFILL IS NOT REQUIRED IF PIPE SLOPE EXCEEDS 1%.
7. COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE CITY ENGINEER. THE COST OF RETESTING DUE TO FAILED COMPACTION TESTS WILL BE BACKCHARGED TO THE CONTRACTOR.

NOTE TO CONTRACTOR

ALL MANHOLES AND CLEANOUTS WITHIN TRACT, INCLUDING EXISTING MANHOLES, SHALL BE ADJUSTED TO FINISH GRADE IN ACCORDANCE WITH CITY STANDARDS. EXISTING MANHOLES MAY REQUIRE REMOVAL OF EXISTING CONE, AND REMOVAL OR "CHANGE OUT" OF BARREL RINGS.

CITY STANDARD PLATES

1. THE FOLLOWING CITY OF BAKERSFIELD STANDARD DRAWINGS SHALL BE CONSIDERED A PART OF THESE PLANS. (CONTRACTOR TO OBTAIN LATEST EDITION, 10-26-89, THEREOF UNLESS OTHERWISE NOTED)

CITY STD. No.	DESCRIPTION	CITY STD. No.	DESCRIPTION
☒ SW-1	SEWER LATERAL MARKER	☐ D-6	LANDSCAPED CONSTRUCTED CHANNELS
☐ SW-2	TRENCH SECTION FOR CONCRETE ENCASED PIPE	☐ D-7	RIGHT OF WAY FOR CONSTRUCTED CHANNELS
☒ SW-3	PAVEMENT PATCHES	☐ D-8	RIGHT OF WAY FOR LINED CONSTRUCTED CHANNELS
☒ SW-4	MANHOLE, TYPE "A"	☐ D-9	PIPE SADDLE DETAIL
☒ SW-5	FRAMES & COVER FOR MANHOLES & CLEANOUTS	☐ D-10	SIDEWALK UNDERDRAIN
☐ SW-6	6" CLEAN OUT	☒ D-11	DRAINAGE BASIN
☒ SW-7	HOUSE CONNECTION WITH VCP SADDLE	☒ D-12	CHAIN LINK FENCES
☐ SW-8	INDUSTRIAL SAND TRAP	☒ D-13	CHAIN LINK GATES
☐ SW-10	SAND TRAP	☒ D-14	CATCH BASIN, TYPE "A"
☐ SW-11	HOUSE CONNECTION WITH CAST IRON SADDLE	☐ D-15	CATCH BASIN, TYPE "A-1"
☐ SW-12	SEWER LIFT STATION VALVE BOX	☒ D-16	GUTTER DEPRESSIONS
☐ D-1	INTENSITY VS. DURATION CURVES	☐ D-17	JUNCTION BOX
☐ D-2	RATIONAL METHOD RUNOFF COEFFICIENTS	☐ D-18	MANHOLE, TYPE "B"
☐ D-3	CHANNEL PROTECTION	☐ D-19	DRAINAGE WELL, TYPE "B"
☐ D-4	CHANNEL PROTECTION	☒ ST-22	DATED 1/11/99 TRENCH BACKFILL AND COMPACTION REQUIREMENTS
☐ D-5	RIGHT OF WAY FOR NATURAL CHANNELS	☐ ST-6	DATED 1/11/99 PAVEMENT PATCHES

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PORTER & ASSOCIATES, INC.
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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: SEWER & STORM DRAIN PLANS
GENERAL NOTES - DETAILS

Project Name & Address: INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date: Date: 3/12/2018 | Designer: --- | DR: LGH | PC:

Agency Approval Stamp:

FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
APP'D FLS SS TN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):

REGISTERED PROFESSIONAL ENGINEER · FRED W. PORTER II · RCE 33448 · CIVIL · STATE OF CALIFORNIA

LICENSED ARCHITECT · CURTIS E. FLEMM · No. C 28958 · 5-31-19 · RENEW · STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C2.02

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C.O.B. RECORDS. NO.

J:\3014\Improvements\City Approval\Sewer-Storm Drain Plans\dwg\3014-SWR_Front Sheet.dwg

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CONSTRUCTION SPECIFICATIONS

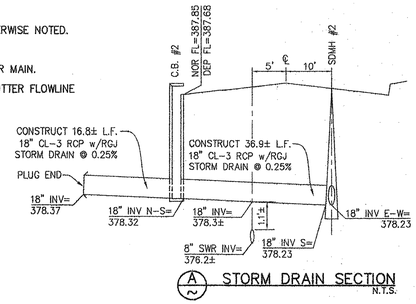
- INSTALL SEWER MANHOLE
- INSTALL SEWER CLEANOUT
- INSTALL SEWER
- INSTALL STORM DRAIN
- INSTALL STORM DRAIN MANHOLE
- INSTALL TYPE "A" CATCH-BASIN
- RIGHT-OF-WAY
- EX S — EXISTING SEWER
- EX SD — EXISTING STORM DRAIN
- W — EXISTING WATER MAIN
- EXISTING EDGE OF PAVEMENT
- SD — STORM DRAIN STATION
- SS — SANITARY SEWER STATION
- PROPERTY LINE

ALL PLAN VIEW STATIONING IS BASED ON CENTERLINE DATA UNLESS OTHERWISE NOTED.

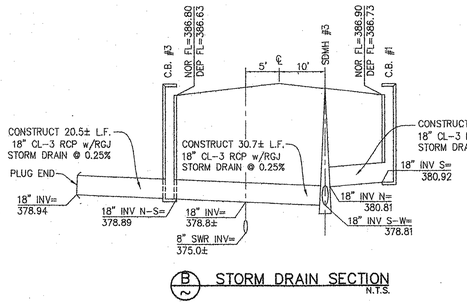
ALL SEWER LATERALS ARE 6" PVC @ 1.00% UNLESS OTHERWISE NOTED.

ALL SEWER LATERAL STATIONING IS AT POINT OF CONNECTION WITH SEWER MAIN.

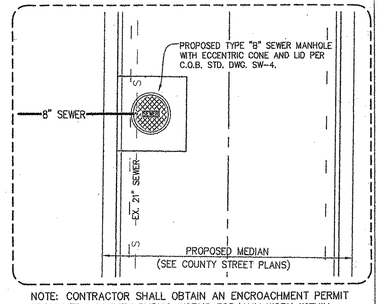
ALL SEWER LATERALS ARE TO HAVE A MINIMUM OF 2.5' OF COVER AT GUTTER FLOWLINE AND A 2.25' MIN. – 7' MAX. OF COVER AT THE PROPERTY LINE.



A STORM DRAIN SECTION N.T.S.



B STORM DRAIN SECTION N.T.S.



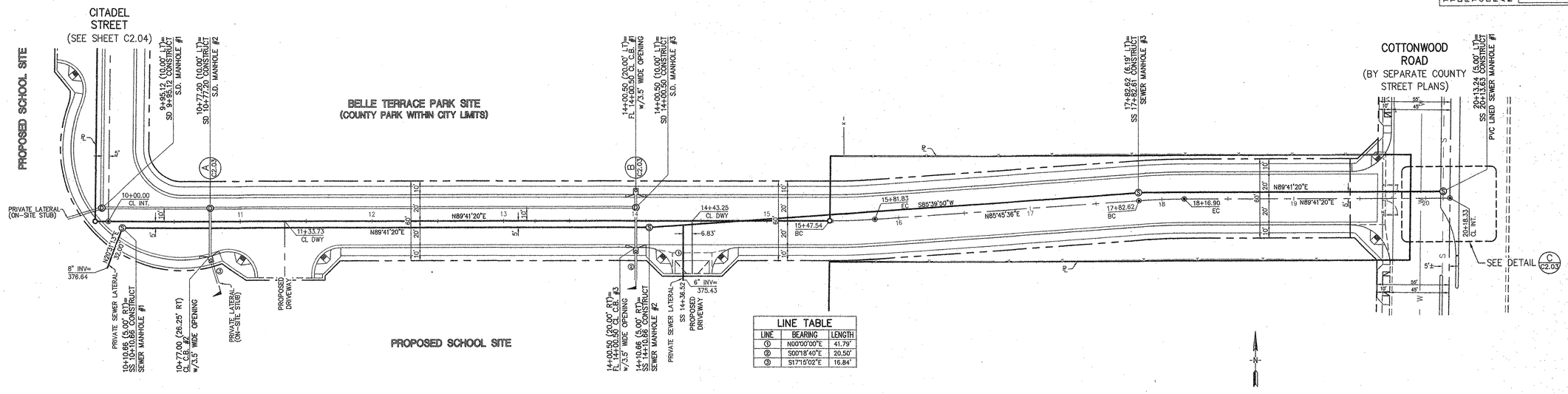
NOTE: CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM KERN COUNTY PUBLIC WORKS FOR ANY WORK WITHIN EXISTING COUNTY OF KERN RIGHT-OF-WAY.

C SEWER MANHOLE DETAIL SCALE 1"=4'

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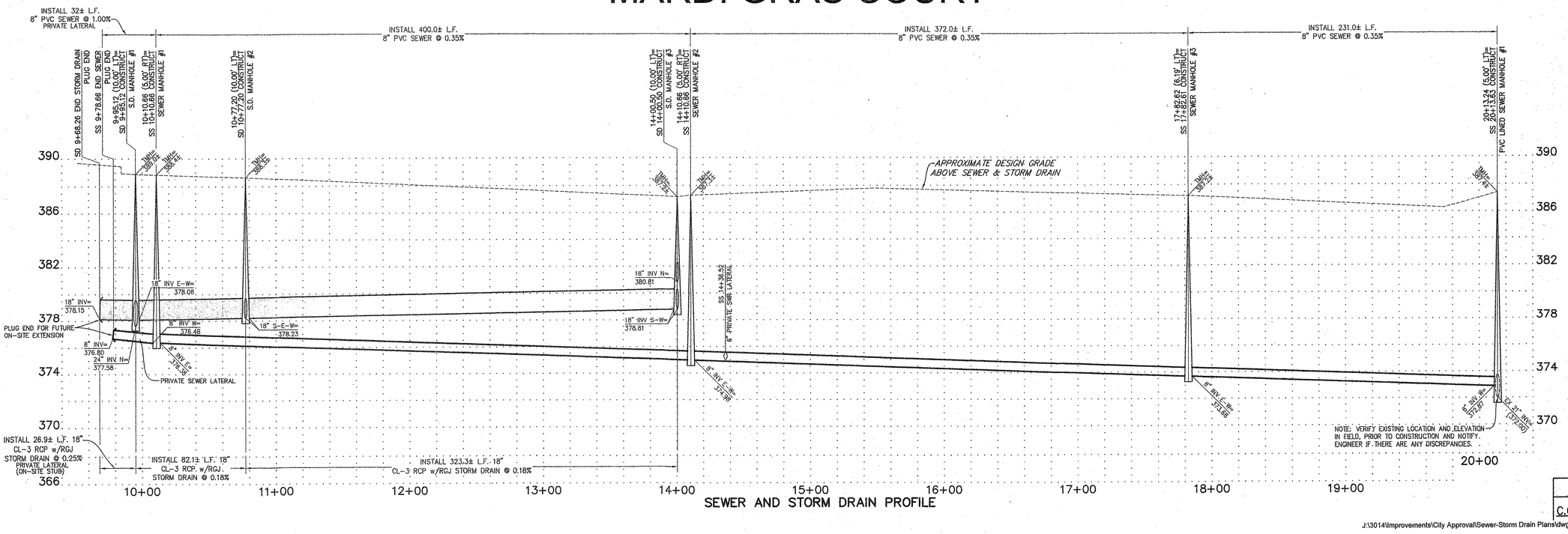
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LINE TABLE		
LINE	BEARING	LENGTH
①	N00°00'00"E	41.79'
②	S00°18'40"E	20.50'
③	S17°15'02"E	16.84'

HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

MARDI GRAS COURT



SEWER AND STORM DRAIN PROFILE

C.O.B. RECORDS, NO.

J:\3014\Improvements\City Approval\Sewer-Storm Drain Plans\dwg\3014-Swr_Plan and Profile.dwg

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Revision:	Revision Description:	Rev. Date:

Sheet Title: SEWER & STORM DRAIN PLANS
MARDI GRAS COURT

Project Name & Address: INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
Date: 3/12/2018	---	LGH	-

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LICENSED ARCHITECT CURTIS E. FLOWER No. C 28666 REN. 8-31-19 STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C2.03

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CONSTRUCTION SPECIFICATIONS

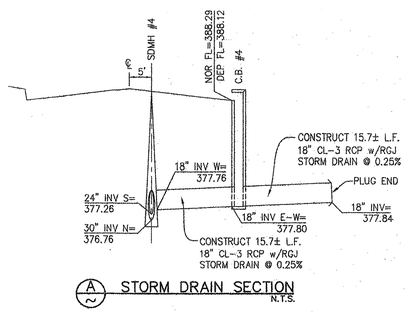
- Ⓢ INSTALL SEWER MANHOLE
- Ⓒ INSTALL SEWER CLEANOUT
- INSTALL SEWER
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- Ⓓ INSTALL STORM DRAIN MANHOLE
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- SS SANITARY SEWER STATION
- ℄ PROPERTY LINE

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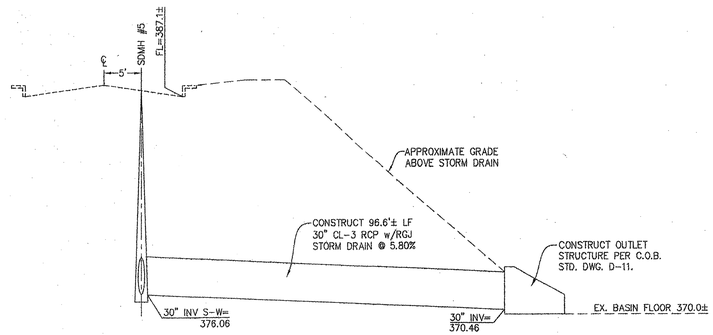
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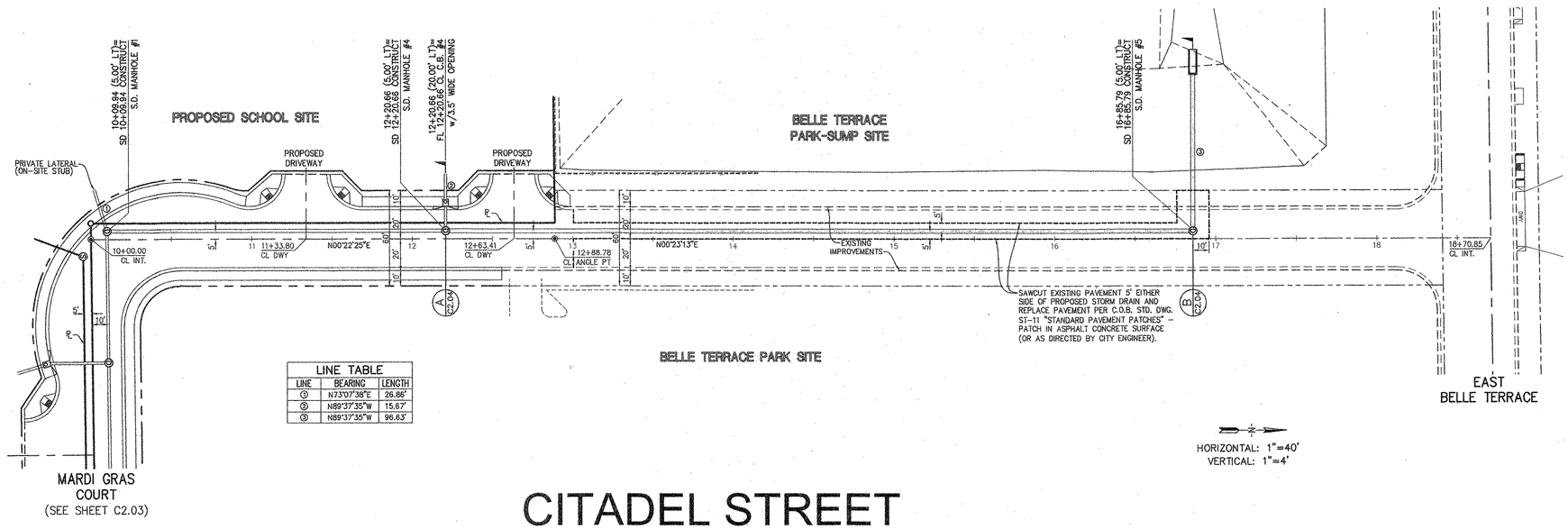
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A STORM DRAIN SECTION
N.T.S.



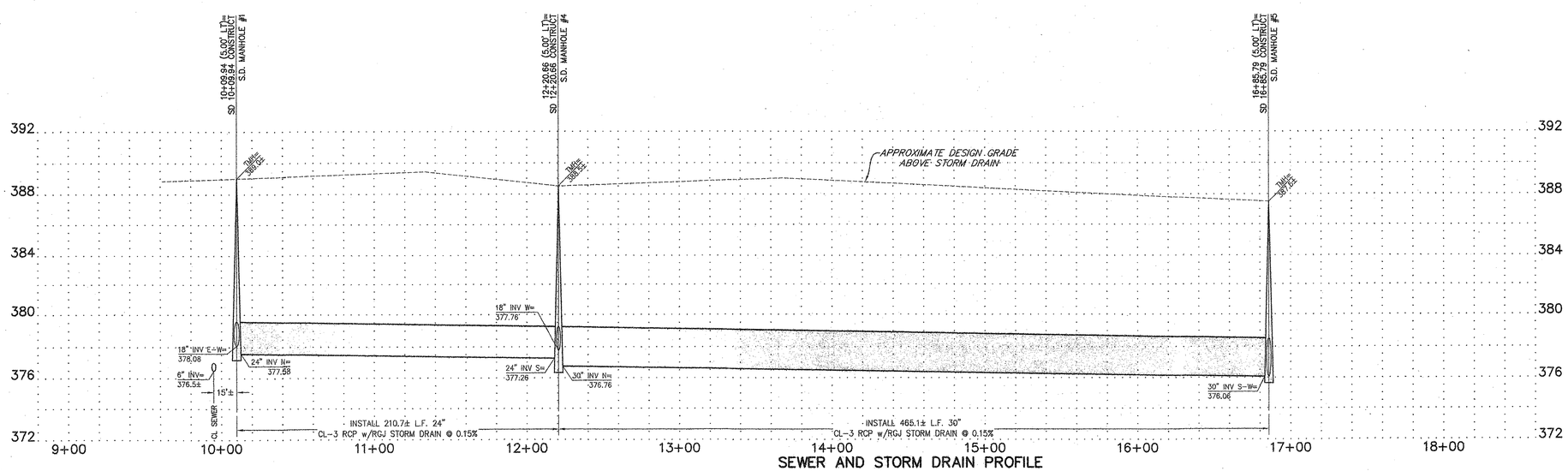
B STORM DRAIN SECTION
N.T.S.



LINE TABLE		
LINE	BEARING	LENGTH
①	N73°07'38"E	26.86'
②	N89°37'35"W	15.67'
③	N89°37'35"W	96.63'

HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

CITADEL STREET



SEWER AND STORM DRAIN PROFILE

C.O.B. RECORDS, NO.

J:\3014\Improvements\City Approval\Sewer-Storm Drain Plans\dwg\3014-Swr_Plan and Profile.dwg

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Sheet Title: SEWER & STORM DRAIN PLANS
CITADEL STREET

Project Name & Address:
INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
-	3/12/2018	---	LGH	-

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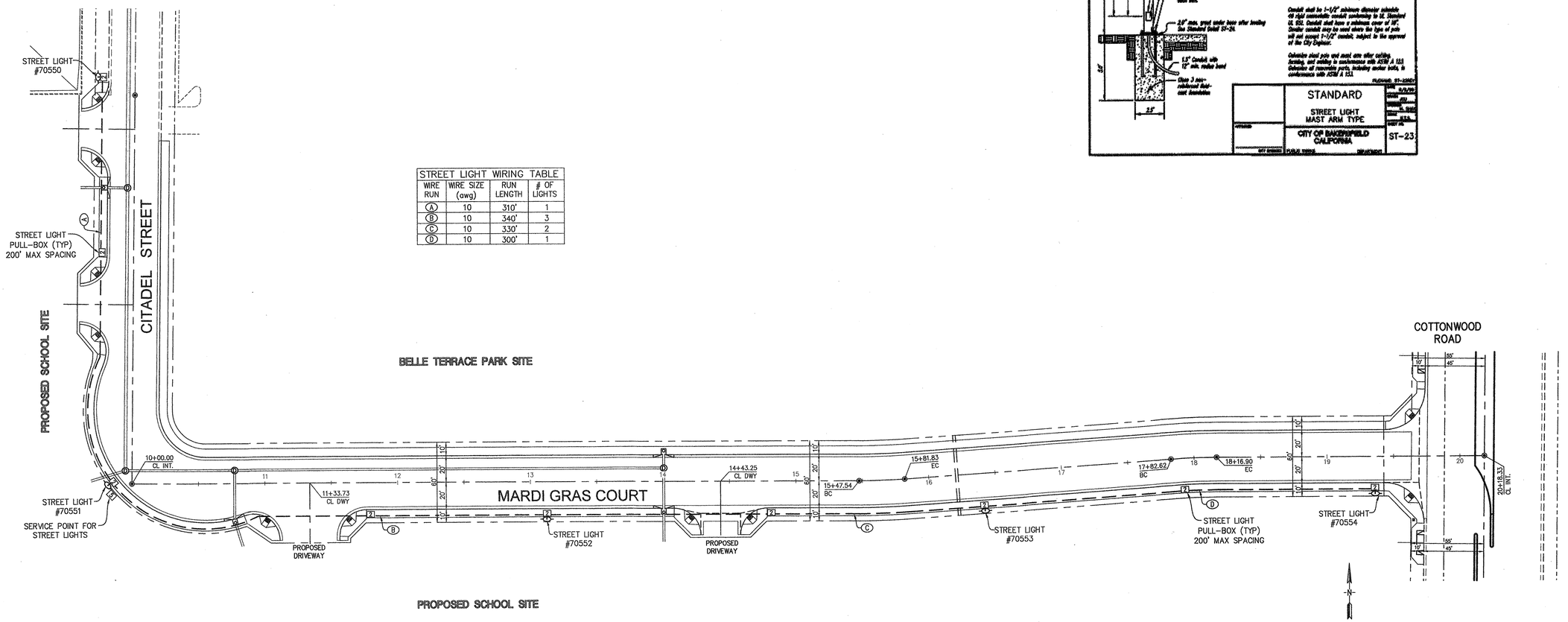
REGISTERED PROFESSIONAL ENGINEER
FRED W. PORTER
RCE 33448
CIVIL
STATE OF CALIFORNIA

LICENSED ARCHITECT
MARTIN E. FLYNN
No. C 29666
REN 5-31-19
STATE OF CALIFORNIA

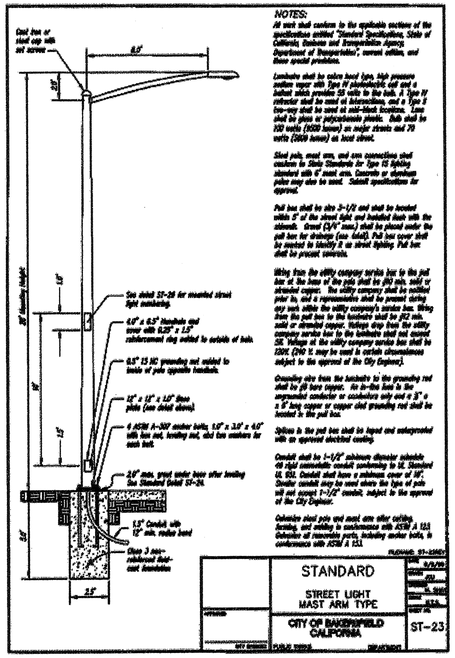
Job No.: 5262

Sheet No.: C2.04

Release: -



STREET LIGHT WIRING TABLE			
WIRE RUN	WIRE SIZE (awg)	RUN LENGTH	# OF LIGHTS
(A)	10	310'	1
(B)	10	340'	3
(C)	10	330'	2
(D)	10	300'	1



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Sheet Title: STREET IMPROVEMENT PLANS
STREET LIGHT DIAGRAM

Project Name & Address: INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
-	3/12/2018	--	LGH	-

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REGISTERED PROFESSIONAL ENGINEER FRED W. PORTER RCE 33448 CIVIL STATE OF CALIFORNIA
LICENSED ARCHITECT CURTIS E. FLINN No. C-29966 REN. 5-31-19 STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C3.01

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NATE SLINKARD

J:\3014\Improvements\City Approval\Street Plans\dwg\3014-ST_Light Plan.dwg

STREET ENCROACHMENT PLANS
PROPOSED SCHOOL SITE
(COTTONWOOD ROAD AND EAST BELLE TERRACE)
BAKERSFIELD, CALIFORNIA

1" = 40'-0" 1" = 30'-0" 1" = 20'-0" 1/8" = 1'-0" 1/4" = 1'-0"

BENCHMARK USED:

TOP OF CONCRETE MONUMENT IN LAMPHOLE AT THE EAST QUARTER CORNER OF SECTION 5, 30/28 M.D.M. LYING 29.45' SOUTH OF THE CENTERLINE INTERSECTION OF EAST BELLE TERRACE AND COTTONWOOD ROAD.

ELEVATION = 385.41 (CITY DATUM) PER TRACT 6378 PLANS

SUBTRACT 1.52' TO OBTAIN COUNTY DATUM.

COUNTY BENCHMARK: CHISELED "O" ON TOP OF CURB, NORTH SIDE OF EAST BELLE TERRACE 175'± WEST OF COTTONWOOD ROAD AT EASTERLY END OF DRIVE APPROACH.

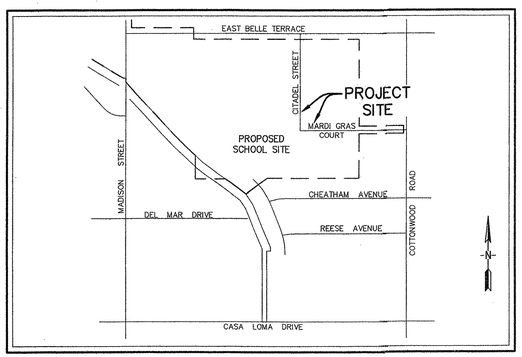
ELEVATION= 384.44 (COUNTY DATUM) PER K.C.S.F.B. 1055, PAGE 79.

BASIS OF BEARINGS:

THE BEARING OF NORTH 89°41'23" EAST FOR THE NORTH LINE OF THE SOUTHEAST QUARTER OF SECTION 5, T. 30 S., R. 28 E., M.D.B.& M. (ALSO BEING THE CENTERLINE OF EAST BELLE TERRACE) PER RECORD OF SURVEY NO. 3546 FILED IN BOOK 30 OF RECORD OF SURVEYS AT PAGE 100 IN THE OFFICE OF THE KERN COUNTY RECORDER'S OFFICE WAS USED AS THE BASIS OF BEARINGS SHOWN UPON THIS MAP.

LEGAL DESCRIPTION:

BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 30 SOUTH, RANGE 28 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE CITY OF BAKERSFIELD, COUNTY OF KERN, STATE OF CALIFORNIA.



VICINITY MAP
NO SCALE

COUNTY OF KERN GENERAL STREET SPECIFICATIONS:

1. ALL IMPROVEMENTS SHALL BE IN ACCORDANCE WITH KERN COUNTY DEVELOPMENT STANDARDS, AND OTHER COUNTY ADOPTED POLICIES. STREET IMPROVEMENTS SHALL BE AS REQUIRED FOR TYPE A SUBDIVISIONS.
2. IMPROVEMENTS SHALL BE IN ACCORDANCE WITH STATE OF CALIFORNIA BUSINESS AND TRANSPORTATION AGENCY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CURRENT EDITION, AS MODIFIED AND DETERMINED APPLICABLE BY THE DIRECTOR.
3. ALL STREETS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE TRAFFIC INDEX AS SHOWN ON THE TYPICAL CROSS-SECTIONS.
4. ALL STREETS HAVE BEEN DESIGNED USING A MINIMUM "R" VALUE AS SHOWN ON THE TYPICAL CROSS-SECTIONS. SHOULD FURTHER TESTING SHOW A LOWER "R" VALUE OF THE ACTUAL IN PLACE MATERIAL, STREETS SHALL BE REDESIGNED ACCORDING TO THE LOWER "R" VALUE.
5. ANY LAYER OF "R" VALUE MATERIAL SPECIFIED IN THE TYPICAL CROSS-SECTION MAY BE INCREASED IN DEPTH PROVIDED THAT THE MATERIAL ABOVE THAT LAYER HAS NO LESS THAN THE MINIMUM THICKNESS SHOWN.
6. IF APPROVED IN WRITING BY THE DIRECTOR, AN ALTERNATE PAVEMENT DESIGN USING CLASS III AGGREGATE BASE AND A THICKER A.C. SECTION MAY BE USED.
7. ANY WORK WHICH AFFECTS ANY EXISTING COUNTY MAINTAINED ROAD OR TRAFFIC THEREON SHALL BE COMPLETED WITHIN 20 WORKING DAYS FROM START OF WORK.
8. ELEVATIONS AND GRADES SHOWN ON THE PROFILES ARE GUTTER FLOWLINES (INVERTS).
9. MAXIMUM PLUS GRADE TOLERANCE FOR A.B., A.S.B/ AND O.G. SHALL BE 0.05 OF A FOOT.
10. PORTLAND CEMENT CONCRETE SHALL BE CLASS 3 UNLESS OTHERWISE INDICATED. ALL CONCRETE SHALL HAVE ALL EXPOSED SURFACES TREATED WITH A WHITE PIGMENTED CURING COMPOUND (SEE SECTION 90-7.01B OF THE STD. SPECS.) AFTER FINISHING.
11. PERMANENT TRAFFIC CONTROL SIGNING AND OTHER SAFETY DEVICES (NOT SHOWN ON THESE PLANS) SHALL BE INSTALLED TO PLANS APPROVED BY THE KERN COUNTY ENGINEER.
12. STREET LIGHTING SHALL BE INSTALLED AND A MEANS PROVIDED TO CONTRACT FOR PUBLIC UTILITY SERVICES AND MAINTENANCE.
13. PRIOR TO START OF ANY EARTHWORK, THE SUBDIVIDER SHALL OBTAIN A GRADING PERMIT AS REQUIRED BY KERN COUNTY CODE OF BUILDING REGULATIONS AND GRADING ORDINANCE.
14. WHEEL CHAIR RAMPS SHALL BE CONSTRUCTED AT CURB RETURNS PER PLATE R-60 OF THE KERN COUNTY DEVELOPMENT STANDARDS AND AS DIRECTED BY THE ENGINEER. CURB RAMPS SHALL HAVE DETECTABLE WARNING SURFACE THAT EXTENDS THE FULL WIDTH AND DEPTH OF THE CURB RAMP, EXCLUDING FLARED SIDES.
15. ALL EXISTING FACILITIES, INCLUDING BUT NOT LIMITED TO STRUCTURES, POLES, PIPELINES CONDUITS, CANALS, AND APPURTENANCES, WHICH ARE CONSIDERED TO BE OBSTRUCTIONS BY THE COUNTY ENGINEER, SHALL BE RELOCATED AT THE EXPENSE OF THE SUBDIVIDER.
16. NEW STREETS SHALL BE EXTENDED AT INTERSECTIONS AS DIRECTED BY THE COUNTY ENGINEER IN ORDER TO PROVIDE A SAFE CONNECTION TO THE EXISTING STREET PAVEMENT.
17. STORM DRAINAGE SUMP(S) SHALL NOT BE ALLOWED TO ACCEPT WATER UNTIL SECURED BY PERMANENT FENCING, OR IN THE CASE OF SHALLOW UNFENCED SUMPS, NOT UNTIL COMPLIANCE WITH DEPTH AND SIDE SLOPE CRITERIA AS SET BY THE KERN COUNTY DEVELOPMENT STANDARDS, DIVISION FOUR.
18. ASPHALT REJUVENATING AGENT SHALL BE APPLIED TO NEW ASPHALT CONCRETE PAVEMENT, AS DIRECTED BY THE COUNTY ENGINEER, IN ACCORDANCE WITH THE PROVISIONS IN SECTION 37 "BITUMINOUS SEALS" OF THE STANDARD SPECIFICATIONS, CURRENT EDITION, AND THE STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIAL PROVISIONS CURRENTLY IN EFFECT.
19. PAVEMENT GRINDING IN ACCORDANCE WITH SECTION 42 OF THE STANDARD SPECIFICATIONS SHALL BE PROVIDED AS DIRECTED BY THE COUNTY ENGINEER WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.
20. ALL FRAMES AND COVERS WITHIN THE ROADWAY SHALL BE RAISED TO FINISH GRADE PER PLATE R-69.
21. UNDERGROUND UTILITIES INCLUDING SERVICES TO BE LOCATED WITHIN RIGHT-OF-WAY SHALL BE INSTALLED PRIOR TO SURFACING THE STREETS.
22. UTILITY VAULTS INSTALLED IN SIDEWALK AREA SHALL HAVE NON-SKID SURFACES/LIDS.
23. WHEN BIKE LANES ARE REQUIRED ALONG A HIGHWAY, THE CURB LINE SHALL BE EXTENDED THREE (3) FEET AND THE PARKWAY AREA REDUCED THREE (3) FEET.

LEGEND

CL–	CENTERLINE
DWY–	DRIVEWAY
FL–	FLOWLINE
BCR–	BEGIN CURB RETURN
ECR–	END CURB RETURN
PI–	POINT OF INTERSECTION
EC–	END CURVE
BC–	BEGIN CURVE
PIVC–	POINT OF INTERSECTION VERTICAL CURVE
POVC–	POINT ON VERTICAL CURVE
BVC–	BEGIN VERTICAL CURVE
EVC–	END VERTICAL CURVE
PRC–	POINT OF REVERSE CURVATURE
PCC–	POINT OF COMPOUND CURVATURE
POC–	POINT ON CURVE
GB–	GRADE BREAK
HP–	HIGH POINT

SHEET No. INDEX

C4.01 TITLE SHEET
C4.02 COTTONWOOD ROAD STREET ENCROACHMENT PLAN
C4.03 COTTONWOOD ROAD STRIPING & SIGNAGE PLAN
C4.04 EAST BELLE TERRACE STRIPING & SIGNAGE PLAN

LEGEND

(X) SHEET INDEX NUMBER
——→ DIRECTION OF DRAINAGE

UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
CALL BEFORE YOU DIG
DIAL TOLL FREE 1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG

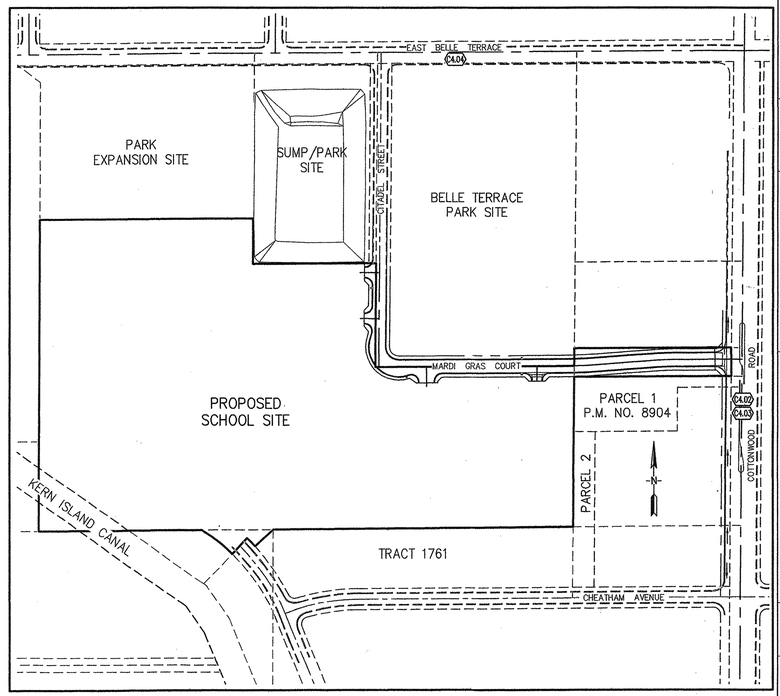
GRADES APPROVED
BY Frank C. Ching
FOR PUBLIC WORKS
DATE 9 FEB 18

SOILS REPORT NOTE

1. SEE SOILS REPORT PREPARED BY KRAZAN AND ASSOCIATES, INC. FILE NO. 022-17101 DATED SEPTEMBER 25, 2017 FOR R-VALUE TESTS.

CONTRACTORS NOTE

1. CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE KERN COUNTY PUBLIC WORKS DEPARTMENT PRIOR TO ANY CONSTRUCTION WITHIN COUNTY OF KERN RIGHT-OF-WAY.
2. UNDERGROUND UTILITIES WERE LOCATED BY UNDERGROUND SERVICE ALERT (USA) AND PER UTILITY SCHEMATICS PROVIDED BY UTILITY COMPANIES, ACTUAL LOCATIONS AND DEPTHS SHALL BE VERIFIED IN FIELD PRIOR TO CONSTRUCTION.



KEY MAP
SCALE: 1"=200'

ENGINEER'S STATEMENT:

THESE PLANS AND SPECIFICATIONS WERE PREPARED BY ME OR UNDER MY DIRECTION, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE CITY OF BAKERSFIELD ORDINANCES, STANDARDS AND DESIGN CRITERIA, AND INCLUDE ALL IMPROVEMENTS AND REQUIREMENTS OF THE ADVISORY AGENCY OR OTHER REVIEW BOARD. ANY ERRORS, OMISSIONS OR OTHER VIOLATIONS OF THOSE ORDINANCES, STANDARDS OR DESIGN CRITERIA ENCOUNTERED DURING CONSTRUCTION SHALL BE CORRECTED AND ALL SUCH CORRECTIONS SHALL BE REFLECTED ON REVISED OR AS-BUILT PLANS TO BE SUBMITTED TO THE CITY ENGINEER.

THE ABOVE DRAWINGS AND SPECIFICATIONS, AND IDEAS, DESIGNS, AND ARRANGEMENTS REPRESENTED THEREBY, ARE AND SHALL REMAIN THE PROPERTY OF THE ENGINEER; NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS, OR USED IN CONNECTION WITH ANY WORK OR PROJECT OTHER THAN THE SPECIFIC PROJECT FOR WHICH THEY HAVE BEEN PREPARED AND DEVELOPED, WITHOUT THE WRITTEN CONSENT OF THE ENGINEER. VISUAL CONTACT WITH THESE DRAWINGS OR SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS. THE ENGINEER AND HIS CONSULTANTS SHALL NOT BE RESPONSIBLE FOR ANY CHANGES MADE IN THE DRAWINGS WITHOUT THEIR WRITTEN APPROVAL. ALL DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE PLANS. SHOP DRAWINGS AND DETAILS MUST BE SUBMITTED TO THIS OFFICE FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION.

PORTER & ASSOCIATES, INC.
ENGINEERING & SURVEYING
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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: STREET ENCROACHMENT PLANS
TITLE SHEET

Project Name & Address: INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
-	2/06/2018	-	LGH	-

Agency Approval Stamp:
FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
ACC FLS SS TN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):
REGISTERED PROFESSIONAL ENGINEER FRED W. PORTER RCE 35448 CIVIL STATE OF CALIFORNIA
2-6-18
LICENSED ARCHITECT CURTIS E. FLYNN No. C 28656 RENEW 5-31-19 STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C4.01

Release: -

J:\3014\Improvements\County Approval\Encroachment Permit\3014-EP_Front Sheet.dwg

LUIS HINOJOSA

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TYPE A2-6 CURB AND GUTTER PER K.C.D.S. DWG. R-52.
2. CONSTRUCT 5' WIDE TYPE 2A SIDEWALK PER K.C.D.S. DWG. R-54, R-64 & R-65.
3. CONSTRUCT WIDE CONCRETE CROSS DRAIN PER K.C.D.S. DWG. R-63.
4. CONSTRUCT WHEELCHAIR RAMP PER K.C.D.S. DWG. R-60
5. CONSTRUCT TYPE "B5" OR "B6" CURB PER K.C.D.S. DWG. R-52.
6. CONSTRUCT TYPE "B" RESIDENCE DRIVEWAY PER K.C.D.S. DWG. R-54.
7. SAWCUT TO NEAT VERTICAL FACE, OR AS DIRECTED BY COUNTY ENGINEER.
8. RELOCATE EXISTING APPURTENANCE TO BEHIND PROPOSED SIDEWALK (COORDINATE WITH UTILITY OWNER).
9. ADJUST TO GRADE EXISTING APPURTENANCE (COORDINATE WITH UTILITY OWNER).
- CONSTRUCT CONCRETE MONUMENT ENCASEMENT PER K.C.D.S. DWG. R-58.
- INSTALL STREET NAME SIGN PER K.C.D.S. DWG. R-65.
- INSTALL TRAFFIC SIGN (AS NOTED) PER K.C.D.S. DWG. R-66~R-68.

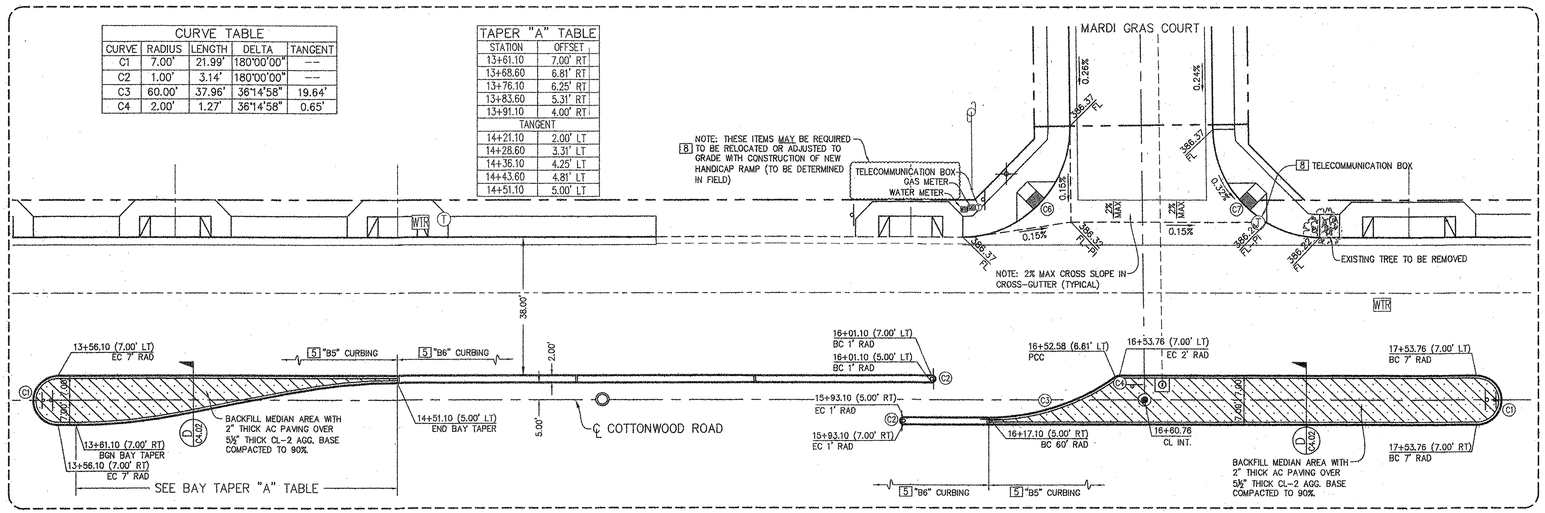
GENERAL SPECIFICATIONS AND LEGEND

1) ALL PLAN VIEW STATIONING IS BASED ON CENTERLINE DATA UNLESS OTHERWISE NOTED.
2) ALL PROFILE STATIONING IS BASED ON FLOWLINE DATA UNLESS OTHERWISE NOTED.
3) ALL EXISTING FENCES, AND GATES WITHIN ULTIMATE R/W SHALL BE REMOVED/RELOCATED BY PROPERTY OWNER TO OUTSIDE ULTIMATE R/W (NOT A PART OF THESE PLANS).

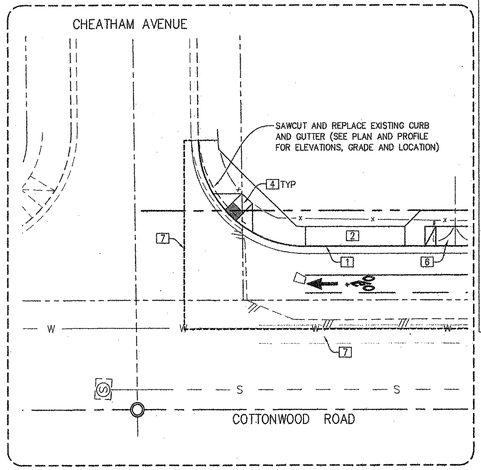
- FL — FLOWLINE STATION
- INSTALL TRAFFIC SIGN (AS NOTED) PER K.C.D.S. DWG. T-2.
- RIGHT-OF-WAY
- EXISTING EDGE OF PAVEMENT
- REMOVE AND DISPOSE OF PROPERLY EXISTING CONCRETE OR ASPHALT
- EXISTING TELECOMMUNICATION BOX
- EXISTING WATER VALVE
- EXISTING WATER METER (TO BE RELOCATED BY CAL-WATER-IF NECESSARY)
- EXISTING FIRE HYDRANT (PROTECT IN PLACE)

CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C1	7.00'	21.99'	180°00'00"	--
C2	1.00'	3.14'	180°00'00"	--
C3	60.00'	37.96'	36°14'58"	19.64'
C4	2.00'	1.27'	36°14'58"	0.65'

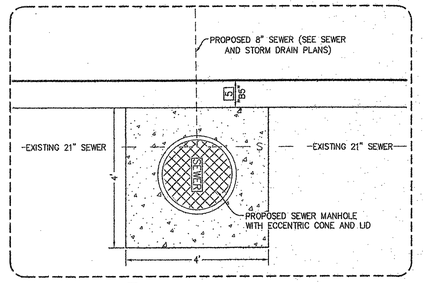
TAPER "A" TABLE	
STATION	OFFSET
13+61.10	7.00' RT
13+68.60	6.81' RT
13+76.10	6.25' RT
13+83.60	5.31' RT
13+91.10	4.00' RT
TANGENT	
14+21.10	2.00' LT
14+28.60	3.31' LT
14+36.10	4.25' LT
14+43.60	4.81' LT
14+51.10	5.00' LT



A C4.02 MEDIAN DETAIL
SCALE 1"=20'

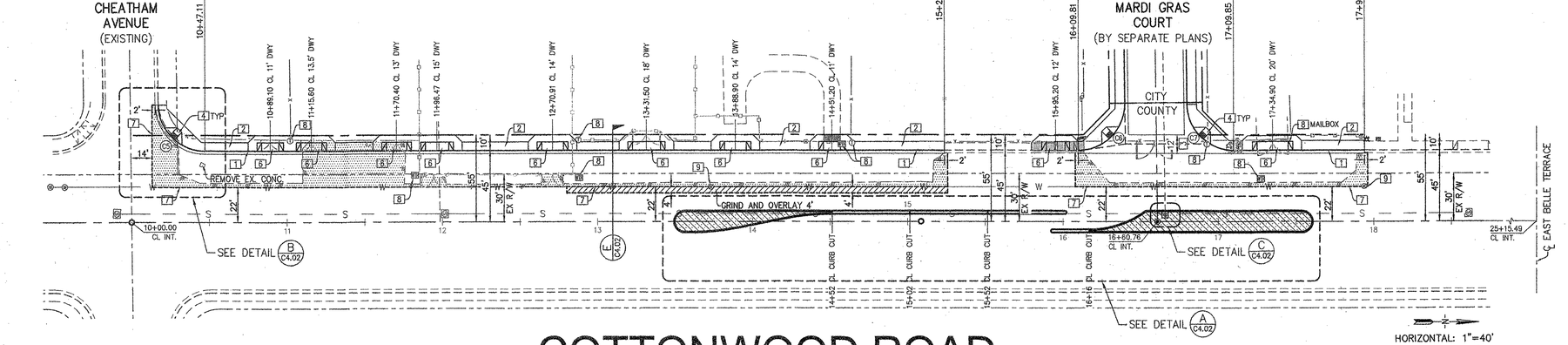


B C4.02 AREA DETAIL
SCALE 1"=20'



C C4.02 SEWER MANHOLE DETAIL
SCALE 1"=2'

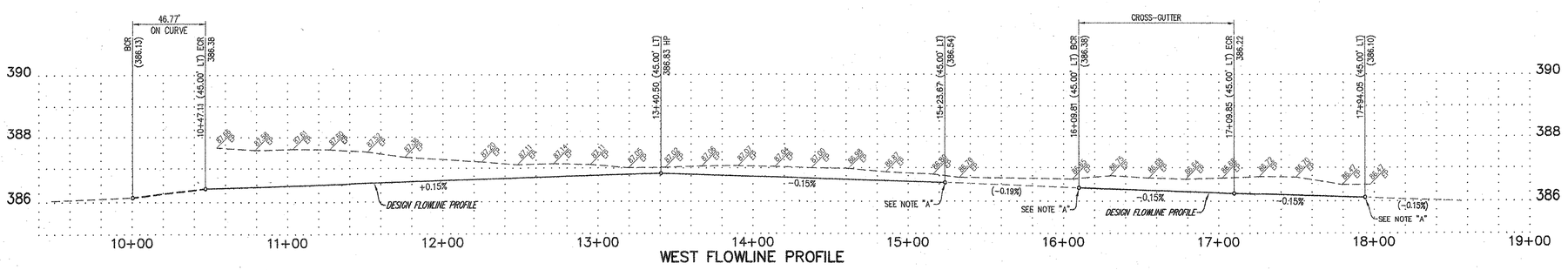
CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C5	30.00'	46.77'	89°19'00"	29.64'
C6	30.00'	47.52'	90°45'27"	30.40'
C7	30.00'	46.76'	89°18'07"	29.64'



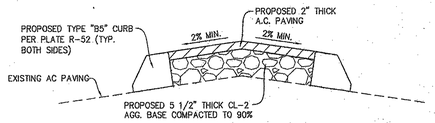
COTTONWOOD ROAD

CONSTRUCT MIN. 0.45' A.C. PAVING OVER
MIN. 0.50' CL-II AGGREGATE BASE OVER MIN. 1.55' NAT. GRD.
COMPACTED TO 95% MAX. DENSITY
TI=8.5 R=50

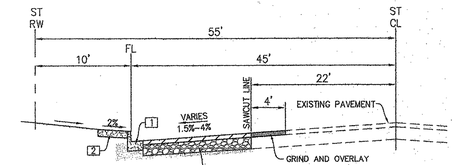
NOTE "A": VERIFY EXISTING LOCATION AND ELEVATION IN FIELD, PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.



WEST FLOWLINE PROFILE



D C4.02 TYPICAL CROSS SECTION
NOT TO SCALE



(PER K.C.D.S. PLATE R-1)

E C4.02 TYPICAL CROSS SECTION
NOT TO SCALE

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Revision:	Revision Description:	Rev. Date:	Revision:	Rev. Date:

Sheet Title: **STREET ENCROACHMENT PLANS**
COTTONWOOD ROAD

Project Name & Address: **INCREMENT 1 OFF-SITE IMPROVEMENTS**
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date:	Designer:	
Date: 2/06/2018	DR: LGH	PC:

Agency Approval Stamp:

FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
AC FLS SS IN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):

REGISTERED PROFESSIONAL ENGINEER — FRED W. PORTER — RCE 33448 — CIVIL — STATE OF CALIFORNIA

LICENSED ARCHITECT — CURTIS E. FLINN — No. C-28566 — REN. 5-31-19 — STATE OF CALIFORNIA

Job No.: **5262**

Sheet No.: **C4.02**

Release: -

J:\3014\Improvements\County Approval\Encroachment Permit\3014-EP_Plan&profile.dwg MATTHEW CARSON

ROADSIDE SIGN & PAVEMENT DELINEATION SPECIFICATIONS

1. TRAFFIC STRIPING, PAVEMENT LEGENDS, & RECESSED MARKERS SHALL BE PER CALTRANS STANDARD PLANS AND SPECIFICATIONS CURRENT EDITION AND THE CALIFORNIA MUTCD CURRENT EDITION.
2. PAINTING PROCEDURES FOR STRIPING AND MARKINGS SHALL BE PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (APWA/AGC).
3. ALL CONFLICTING MARKINGS SHALL BE REMOVED BY WET SANDBLASTING. ALL CONFLICTING RAISED PAVEMENT MARKERS SHALL BY PRIED OFF AND ANY REMAINING RESIDUE SHALL BE REMOVED BY WET SANDBLASTING. ALL SANDBLASTED AREAS NOT COVERED BY OVERLAY OR SEAL COAT SHALL BE FOG SEALED.
4. ALL SIGNING AND TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE PER THE CALIFORNIA MUTCD CURRENT EDITION.
5. ALL POSTS SHALL BE PER CITY OF BAKERSFIELD AND/OR KERN COUNTY STANDARDS OR APPROVED EQUAL.
6. STRIPING AND SIGNING TO BE DONE BY THE CONTRACTOR AND IS SUBJECT TO APPROVAL BY THE CITY OF BAKERSFIELD AND/OR KERN COUNTY PUBLIC WORKS DEPARTMENT.
7. STRIPING AND MARKINGS FOR STOP BARS AND "STOP" TEXT SHALL BE THERMOPLASTIC CONFORMING TO SECTION 84 OF THE STATE STANDARD SPECIFICATIONS EXCEPT WHERE NOTED OTHERWISE.
8. PAVEMENT MARKINGS TO BE THERMOPLASTIC PAINT PER CALTRANS STANDARD SPECIFICATION PTH-02ALKYD
9. ALL CONSTRUCTION MATERIALS FOR ROADSIDE SIGNS, TRAFFIC STRIPING, PAVEMENT MARKERS, AND PAVEMENT MARKINGS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
10. LANE WIDTHS SHOWN ON THE PLAN ARE DIMENSIONED FROM FACE OF CURB TO CENTER OF STRIPE, OR BETWEEN CENTERS OF STRIPES.
11. ALL EXISTING STRIPING AND PAVEMENT MARKINGS IN THE AREA WHICH IS TO REMAIN AND WHICH IS DAMAGED DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
12. ALL STRIPING WITHIN COUNTY RIGHT-OF-WAY SHALL BE TRAFFIC PAINT (2 COAT) PER CALTRANS STANDARD SPECIFICATIONS.

PAVEMENT DELINEATION LEGEND

(X)	INSTALL TRAFFIC STRIPE PER CALTRANS STANDARD PLAN NOS. A20A, A20B, AND A20D. NUMBER IN ⬭ INDICATES DETAIL NO. ON STANDARD PLAN.
CW	INSTALL 12" YELLOW CROSSWALK LINE AS SHOWN.
LL	INSTALL 12" WHITE LIMIT LINE AS SHOWN.
R	REMOVE ALL EXISTING PAVEMENT MARKINGS AND/OR TRAFFIC STRIPING IN CONFLICT WITH NEW CONSTRUCTION (TYPICAL).
D	INSTALL 12" YELLOW DIAGONALS AS SHOWN (20' MAX O.C.)
EX	EXISTING STRIPING TO REMAIN (PROTECT IN PLACE)
NY	PAINT MEDIAN NOSE YELLOW
	INSTALL TYPE IV(L) WHITE ARROW CENTERED IN LANE AS SHOWN.
	INSTALL LANE REDUCTION ARROW AS SHOWN.
STOP	INSTALL WHITE "STOP" LEGEND AS SHOWN
STOP AHEAD	INSTALL WHITE "STOP AHEAD" LEGEND AS SHOWN
	INSTALL BIKE LANE SYMBOL w/PERSON AND ARROW PER CALTRANS STD. DWG. A24C

NOTE: PRIOR TO PAVING, THE DESIGN ENGINEER FOR THE PROJECT SHALL VERIFY CONDITIONS REMAIN THE SAME AS SHOWN IN THE APPROVED PLANS. SHOULD CONDITIONS BE CHANGED, A REVISED STRIPING PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL 10 DAYS PRIOR TO PAVING.

SIGN CODES

R1-1	~ STOP SIGN
W9-1	~ RIGHT LANE ENDS
SW24-2(CA)	~ SCHOOL CROSSWALK WARNING ASSEMBLY B (CA)
R6-1R	~ ONE WAY
R5-1	~ DO NOT ENTER
SW24-3(CA)	~ SCHOOL CROSSWALK WARNING
R4-1	~ DO NOT PASS
R4-7	~ KEEP RIGHT
R3-4	~ NO U-TURN
W4-2	~ LANE ENDS
SNS	~ STREET NAME SIGN
TYPE Q(CA)	~ MARKER
R81(CA)	~ BIKE LANE

NOTE: SIGN CODES ARE FEDERAL CODES UNLESS OTHERWISE INDICATED BY (CA). (CA) INDICATES CALIFORNIA CODES.

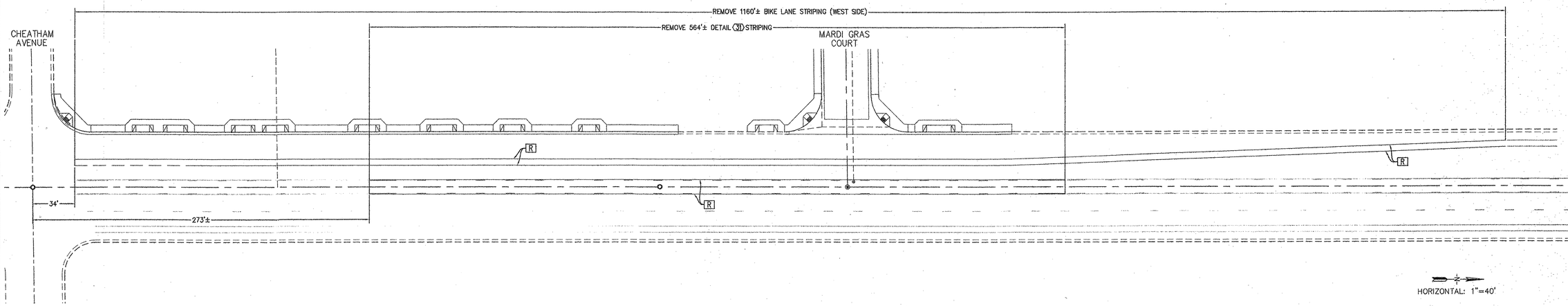
SIGN LEGEND

	INSTALL NEW 1 POST SIGN IN SQUARE SLEEVE PER K.C.D.S. PLATE T-2.
△	RELOCATE EXISTING SIGN.
★	REMOVE EXISTING SIGN (SALVAGE TO CONTRACTOR).
	PROPOSED SIGN LOCATION

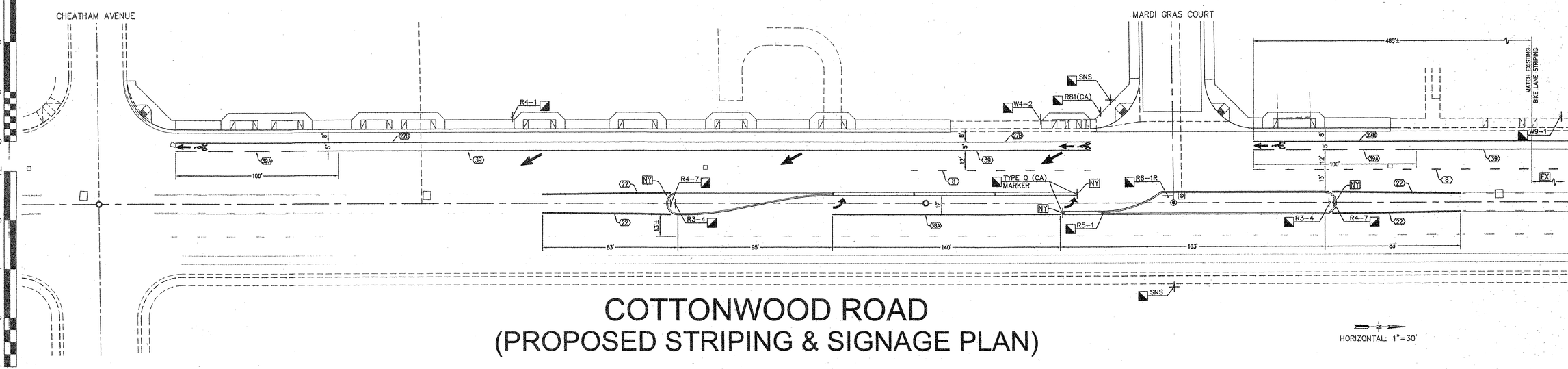
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COTTONWOOD ROAD
(EXISTING STRIPING REMOVAL PLAN)



COTTONWOOD ROAD
(PROPOSED STRIPING & SIGNAGE PLAN)

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Revision:	Revision Description:	Rev. Date:

Sheet Title: STREET ENCROACHMENT PLANS
COTTONWOOD ROAD
STRIPING & SIGNAGE PLAN

Project Name & Address: INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date: Date: 2/06/2018 | Designer: -- | DR: LGH | PC:

Agency Approval Stamp:

FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
AS ~~FS~~ SS IN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):

REGISTERED PROFESSIONAL ENGINEER FRED W. PORTER II RCE 33448 CIVIL STATE OF CALIFORNIA

LICENSED ARCHITECT CURTIS E. EVANS No. C 26966 REN. 5-31-19 STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C4.03

Release: -

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MATTHEW CARSON

ROADSIDE SIGN & PAVEMENT DELINEATION SPECIFICATIONS

1. TRAFFIC STRIPING, PAVEMENT LEGENDS, & RECESSED MARKERS SHALL BE PER CALTRANS STANDARD PLANS AND SPECIFICATIONS CURRENT EDITION AND THE CALIFORNIA MUTCD CURRENT EDITION.
2. PAINTING PROCEDURES FOR STRIPING AND MARKINGS SHALL BE PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (APWA/AGC).
3. ALL CONFLICTING MARKINGS SHALL BE REMOVED BY WET SANDBLASTING. ALL CONFLICTING RAISED PAVEMENT MARKERS SHALL BY PRIED OFF AND ANY REMAINING RESIDUE SHALL BE REMOVED BY WET SANDBLASTING. ALL SANDBLASTED AREAS NOT COVERED BY OVERLAY OR SEAL COAT SHALL BE FOG SEALED.
4. ALL SIGNING AND TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE PER THE CALIFORNIA MUTCD CURRENT EDITION.
5. ALL POSTS SHALL BE PER CITY OF BAKERSFIELD AND/OR KERN COUNTY STANDARDS OR APPROVED EQUAL.
6. STRIPING AND SIGNING TO BE DONE BY THE CONTRACTOR AND IS SUBJECT TO APPROVAL BY THE CITY OF BAKERSFIELD AND/OR KERN COUNTY PUBLIC WORKS DEPARTMENT.
7. STRIPING AND MARKINGS FOR STOP BARS AND "STOP" TEXT SHALL BE THERMOPLASTIC CONFORMING TO SECTION 84 OF THE STATE STANDARD SPECIFICATIONS EXCEPT WHERE NOTED OTHERWISE.
8. PAVEMENT MARKINGS TO BE THERMOPLASTIC PAINT PER CALTRANS STANDARD SPECIFICATION P1TH–02ALKYD
9. ALL CONSTRUCTION MATERIALS FOR ROADSIDE SIGNS, TRAFFIC STRIPING, PAVEMENT MARKERS, AND PAVEMENT MARKINGS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
10. LANE WIDTHS SHOWN ON THE PLAN ARE DIMENSIONED FROM FACE OF CURB TO CENTER OF STRIPE, OR BETWEEN CENTERS OF STRIPES.
11. ALL EXISTING STRIPING AND PAVEMENT MARKINGS IN THE AREA WHICH IS TO REMAIN AND WHICH IS DAMAGED DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
12. ALL STRIPING WITHIN COUNTY RIGHT–OF–WAY SHALL BE TRAFFIC PAINT (2 COAT) PER CALTRANS STANDARD SPECIFICATIONS.

PAVEMENT DELINEATION LEGEND

- (X) INSTALL TRAFFIC STRIPE PER CALTRANS STANDARD PLAN NOS. A20A, A20B, AND A20D. NUMBER IN ⬭ INDICATES DETAIL NO. ON STANDARD PLAN.
- CW INSTALL 12" YELLOW CROSSWALK LINE AS SHOWN.
- LL INSTALL 12" WHITE LIMIT LINE AS SHOWN.
- R REMOVE ALL EXISTING PAVEMENT MARKINGS AND/OR TRAFFIC STRIPING IN CONFLICT WITH NEW CONSTRUCTION (TYPICAL).
- D INSTALL 12" YELLOW DIAGONALS AS SHOWN (20' MAX O.C.)
- EX EXISTING STRIPING TO REMAIN (PROTECT IN PLACE)
- NY PAINT MEDIAN NOSE YELLOW
- INSTALL TYPE IV(L) WHITE ARROW CENTERED IN LANE AS SHOWN.
- INSTALL LANE REDUCTION ARROW AS SHOWN.
- STOP INSTALL WHITE "STOP" LEGEND AS SHOWN
- STOP AHEAD INSTALL WHITE "STOP AHEAD" LEGEND AS SHOWN
- INSTALL BIKE LANE SYMBOL w/PERSON AND ARROW PER CALTRANS STD. DWG. A24C

NOTE: PRIOR TO PAVING, THE DESIGN ENGINEER FOR THE PROJECT SHALL VERIFY CONDITIONS REMAIN THE SAME AS SHOWN IN THE APPROVED PLANS. SHOULD CONDITIONS BE CHANGED, A REVISED STRIPING PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL 10 DAYS PRIOR TO PAVING.

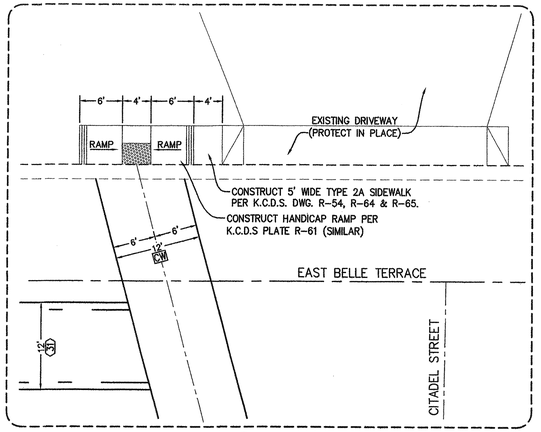
SIGN CODES

R1–1	~	STOP SIGN
W9–1	~	RIGHT LANE ENDS
SW24–2(CA)	~	SCHOOL CROSSWALK WARNING ASSEMBLY B (CA)
R6–1R	~	ONE WAY
R5–1	~	DO NOT ENTER
SW24–3(CA)	~	SCHOOL CROSSWALK WARNING
R4–1	~	DO NOT PASS
R4–7	~	KEEP RIGHT
R3–4	~	NO U–TURN
W4–2	~	LANE ENDS
SNS	~	STREET NAME SIGN
TYPE Q(CA)	~	MARKER
R81(CA)	~	BIKE LANE

NOTE: SIGN CODES ARE FEDERAL CODES UNLESS OTHERWISE INDICATED BY (CA). (CA) INDICATES CALIFORNIA CODES.

SIGN LEGEND

- INSTALL NEW 1 POST SIGN IN SQUARE SLEEVE PER K.C.D.S. PLATE T–2.
- RELOCATE EXISTING SIGN.
- REMOVE EXISTING SIGN (SALVAGE TO CONTRACTOR).
- PROPOSED SIGN LOCATION

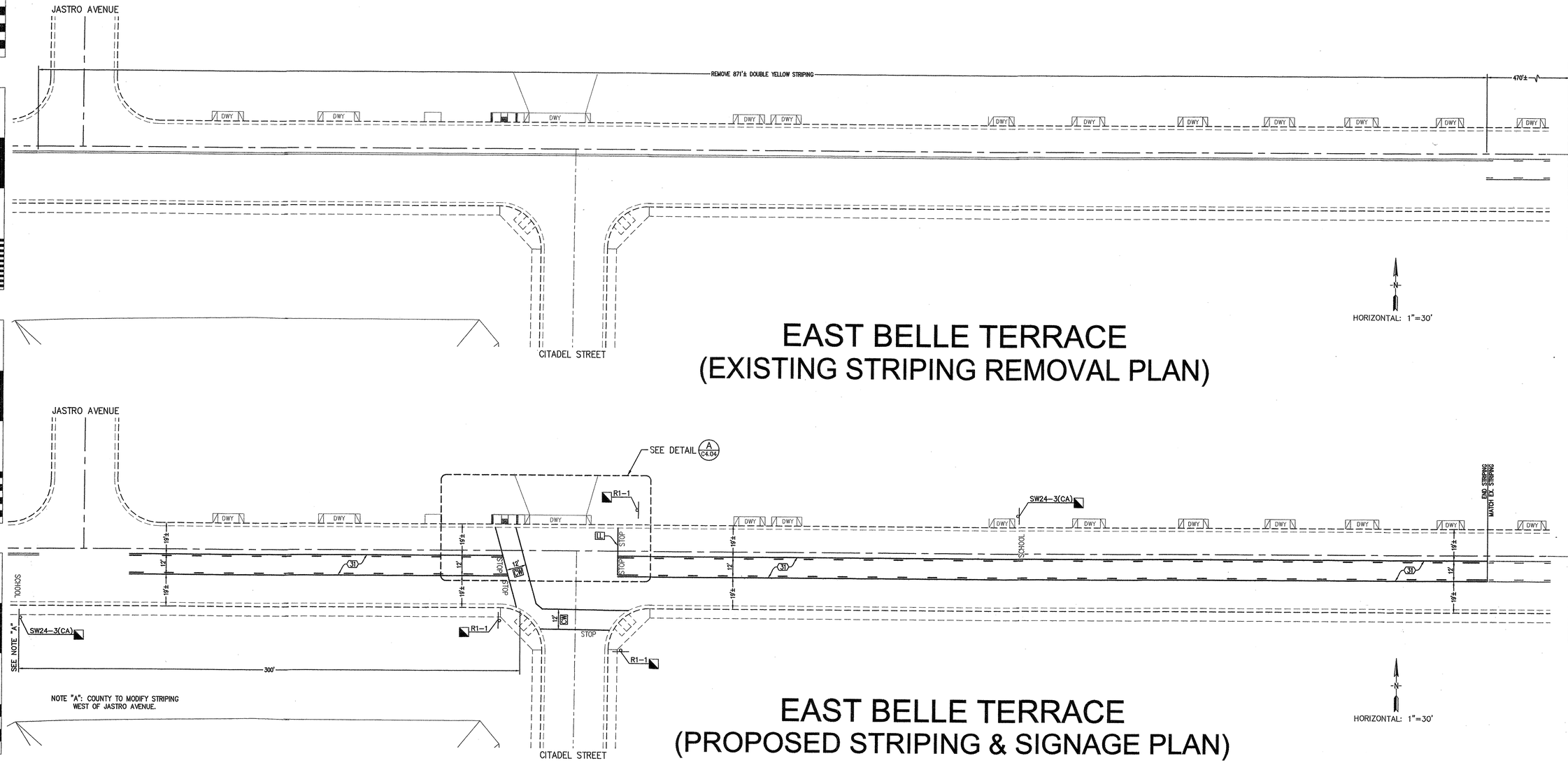


A C4.04 AREA DETAIL
SCALE 1"=10'

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PORTER & ASSOCIATES, INC.
ENGINEERING & SURVEYING
1200 21st Street, Bakersfield, California 93301
661.327.0862 FAX 661.327.1065

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NOTE "A": COUNTY TO MODIFY STRIPING WEST OF JASTRO AVENUE.

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Phone (559) 436-0881 Fax (559) 436-0687 E–Mail: design@somam.com
www.integrateddesigns.com

Revision:	Revision Description:	Rev. Date:

Sheet Title:
STREET ENCROACHMENT PLANS
EAST BELLE TERRACE
STRIPING & SIGNAGE PLAN

Project Name & Address:
INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
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REGISTERED PROFESSIONAL ENGINEER FRED W. PORTER RCE 30448 CIVIL STATE OF CALIFORNIA
2-6-18

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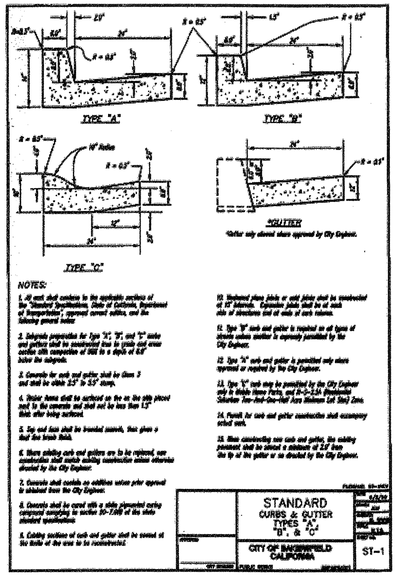
Job No.: **5262**

Sheet No.: **C4.04**

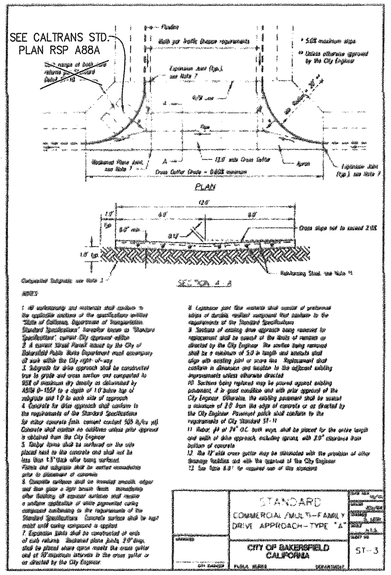
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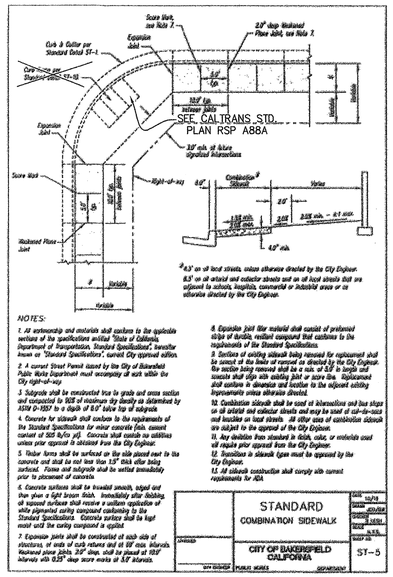
LUIS HINOJOSA



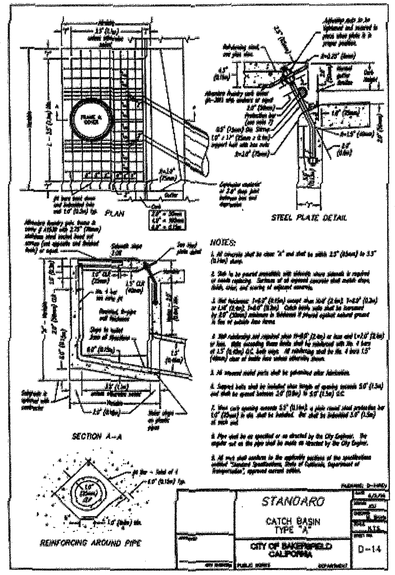
CITY OF BAKERSFIELD



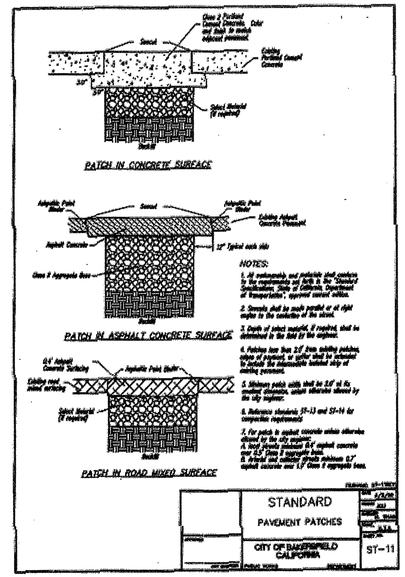
CITY OF BAKERSFIELD



CITY OF BAKERSFIELD



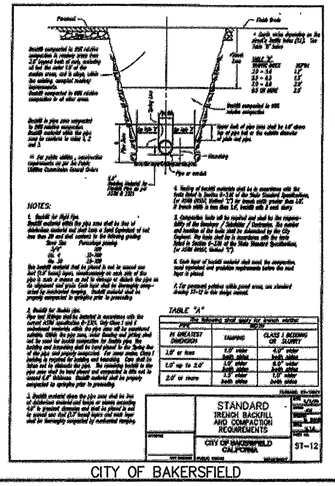
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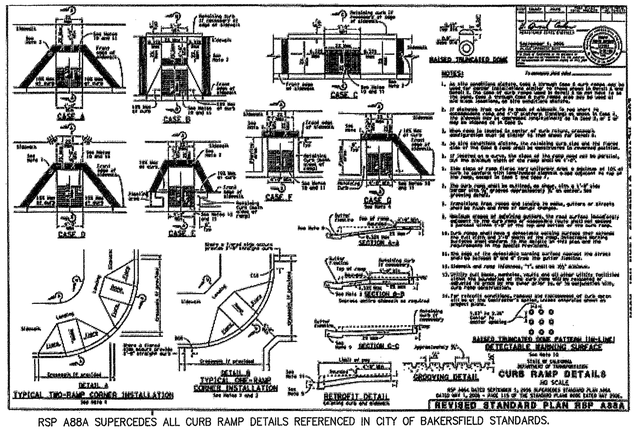
CITY OF BAKERSFIELD

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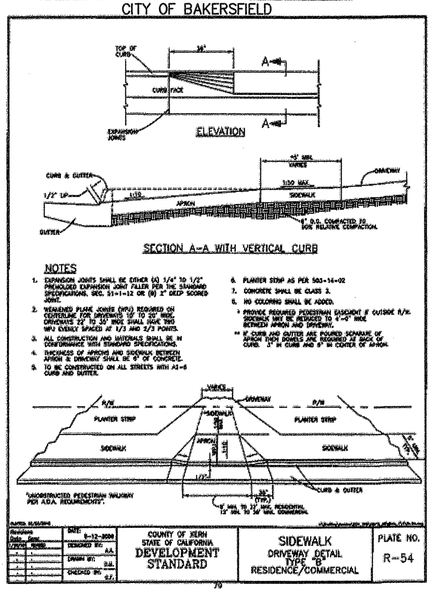


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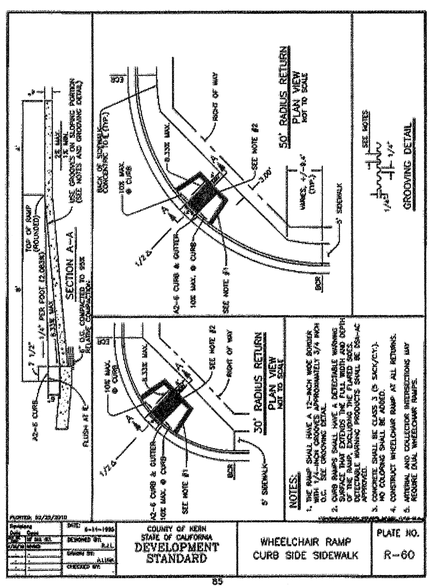
RSP A88A SUPERCEDES ALL CURB RAMP DETAILS REFERENCED IN CITY OF BAKERSFIELD STANDARDS.

CITY OF BAKERSFIELD



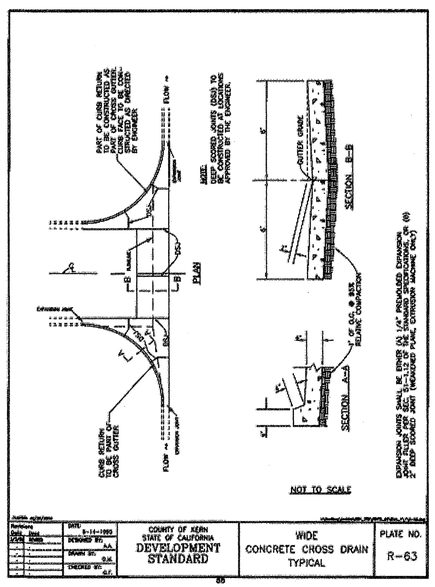
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COUNTY OF KERN



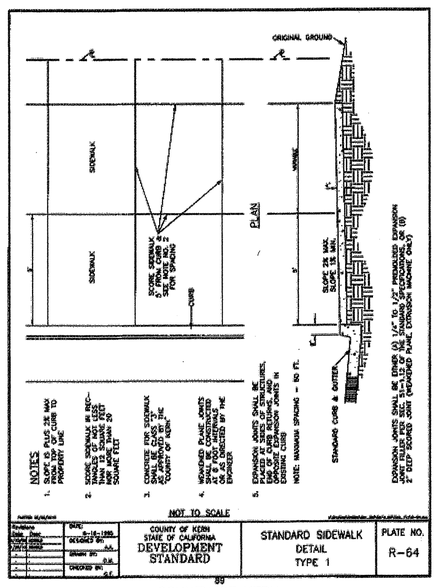
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COUNTY OF KERN



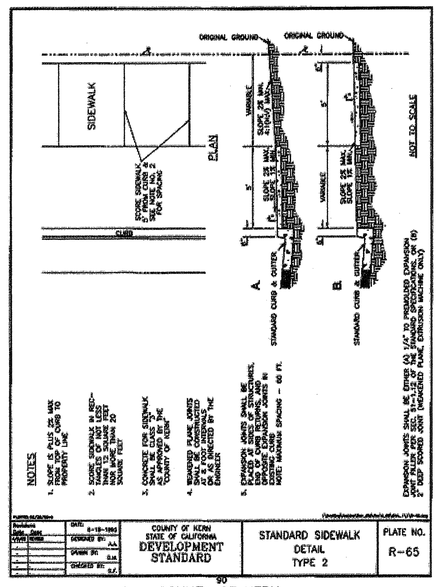
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COUNTY OF KERN



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COUNTY OF KERN



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COUNTY OF KERN

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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title:
CIVIL IMPROVEMENT PLANS
STANDARD DETAILS

Project Name & Address:
INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
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LICENSED ARCHITECT CHRISTIE FINN No. C-28966 REN. 6-31-19 STATE OF CALIFORNIA

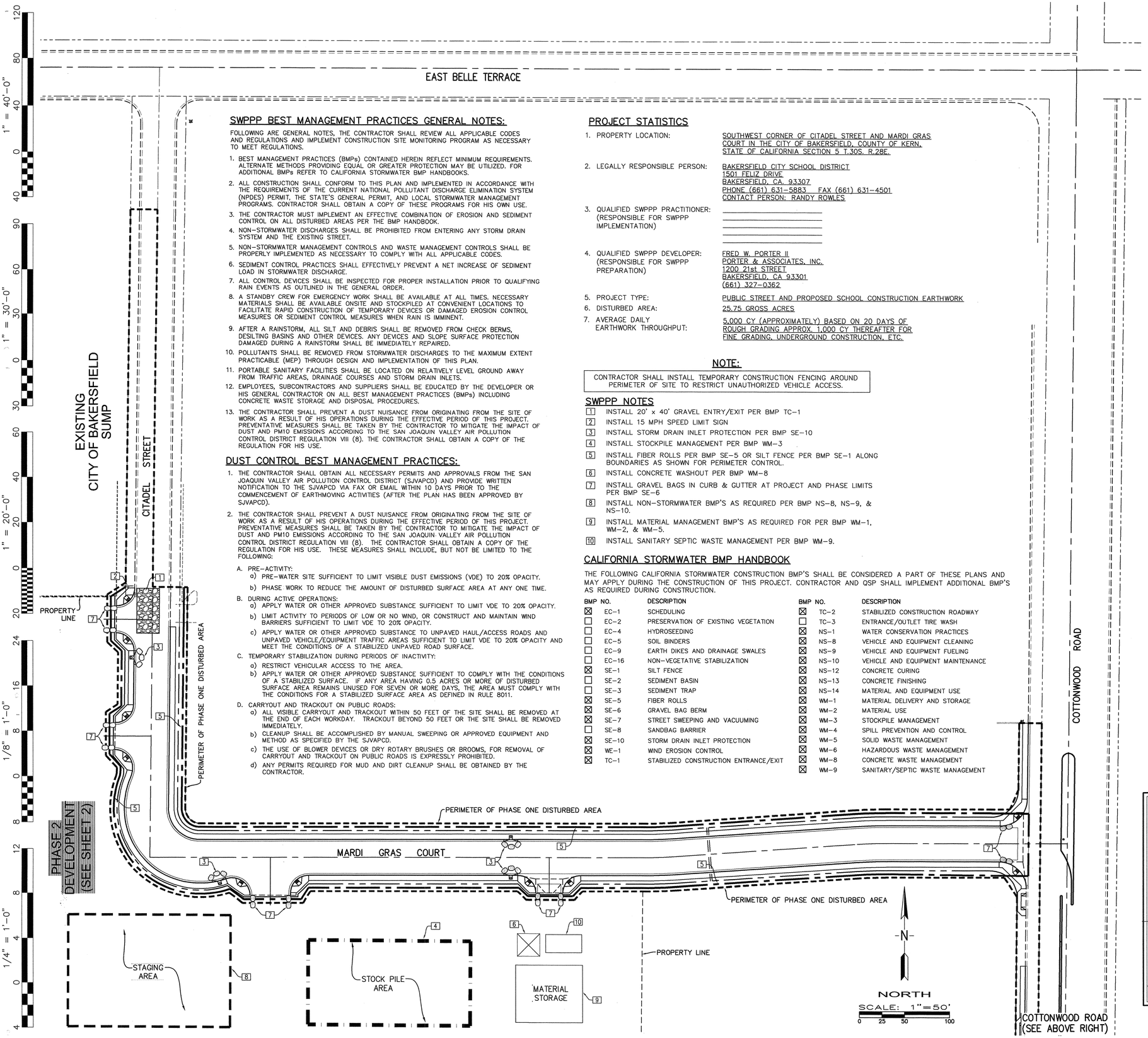
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NATE SLINKARD

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SWPPP BEST MANAGEMENT PRACTICES GENERAL NOTES:

FOLLOWING ARE GENERAL NOTES, THE CONTRACTOR SHALL REVIEW ALL APPLICABLE CODES AND REGULATIONS AND IMPLEMENT CONSTRUCTION SITE MONITORING PROGRAM AS NECESSARY TO MEET REGULATIONS.

1. BEST MANAGEMENT PRACTICES (BMPs) CONTAINED HEREIN REFLECT MINIMUM REQUIREMENTS. ALTERNATE METHODS PROVIDING EQUAL OR GREATER PROTECTION MAY BE UTILIZED. FOR ADDITIONAL BMPs REFER TO CALIFORNIA STORMWATER BMP HANDBOOKS.
2. ALL CONSTRUCTION SHALL CONFORM TO THIS PLAN AND IMPLEMENTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT, THE STATE'S GENERAL PERMIT, AND LOCAL STORMWATER MANAGEMENT PROGRAMS. CONTRACTOR SHALL OBTAIN A COPY OF THESE PROGRAMS FOR HIS OWN USE.
3. THE CONTRACTOR MUST IMPLEMENT AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROL ON ALL DISTURBED AREAS PER THE BMP HANDBOOK.
4. NON-STORMWATER DISCHARGES SHALL BE PROHIBITED FROM ENTERING ANY STORM DRAIN SYSTEM AND THE EXISTING STREET.
5. NON-STORMWATER MANAGEMENT CONTROLS AND WASTE MANAGEMENT CONTROLS SHALL BE PROPERLY IMPLEMENTED AS NECESSARY TO COMPLY WITH ALL APPLICABLE CODES.
6. SEDIMENT CONTROL PRACTICES SHALL EFFECTIVELY PREVENT A NET INCREASE OF SEDIMENT LOAD IN STORMWATER DISCHARGE.
7. ALL CONTROL DEVICES SHALL BE INSPECTED FOR PROPER INSTALLATION PRIOR TO QUALIFYING RAIN EVENTS AS OUTLINED IN THE GENERAL ORDER.
8. A STANDBY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES. NECESSARY MATERIALS SHALL BE AVAILABLE ONSITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES OR DAMAGED EROSION CONTROL MEASURES OR SEDIMENT CONTROL MEASURES WHEN RAIN IS IMMINENT.
9. AFTER A RAINSTORM, ALL SILT AND DEBRIS SHALL BE REMOVED FROM CHECK BERMS, DESILTING BASINS AND OTHER DEVICES. ANY DEVICES AND SLOPE SURFACE PROTECTION DAMAGED DURING A RAINSTORM SHALL BE IMMEDIATELY REPAIRED.
10. POLLUTANTS SHALL BE REMOVED FROM STORMWATER DISCHARGES TO THE MAXIMUM EXTENT PRACTICABLE (MEP) THROUGH DESIGN AND IMPLEMENTATION OF THIS PLAN.
11. PORTABLE SANITARY FACILITIES SHALL BE LOCATED ON RELATIVELY LEVEL GROUND AWAY FROM TRAFFIC AREAS, DRAINAGE COURSES AND STORM DRAIN INLETS.
12. EMPLOYEES, SUBCONTRACTORS AND SUPPLIERS SHALL BE EDUCATED BY THE DEVELOPER OR HIS GENERAL CONTRACTOR ON ALL BEST MANAGEMENT PRACTICES (BMPs) INCLUDING CONCRETE WASTE STORAGE AND DISPOSAL PROCEDURES.
13. THE CONTRACTOR SHALL PREVENT A DUST NUISANCE FROM ORIGINATING FROM THE SITE OF WORK AS A RESULT OF HIS OPERATIONS DURING THE EFFECTIVE PERIOD OF THIS PROJECT. PREVENTATIVE MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO MITIGATE THE IMPACT OF DUST AND PM10 EMISSIONS ACCORDING TO THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT REGULATION VIII (8). THE CONTRACTOR SHALL OBTAIN A COPY OF THE REGULATION FOR HIS USE.

DUST CONTROL BEST MANAGEMENT PRACTICES:

1. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT (SJVAPCD) AND PROVIDE WRITTEN NOTIFICATION TO THE SJVAPCD VIA FAX OR EMAIL WITHIN 10 DAYS PRIOR TO THE COMMENCEMENT OF EARTHMOVING ACTIVITIES (AFTER THE PLAN HAS BEEN APPROVED BY SJVAPCD).
2. THE CONTRACTOR SHALL PREVENT A DUST NUISANCE FROM ORIGINATING FROM THE SITE OF WORK AS A RESULT OF HIS OPERATIONS DURING THE EFFECTIVE PERIOD OF THIS PROJECT. PREVENTATIVE MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO MITIGATE THE IMPACT OF DUST AND PM10 EMISSIONS ACCORDING TO THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT REGULATION VIII (8). THE CONTRACTOR SHALL OBTAIN A COPY OF THE REGULATION FOR HIS USE. THESE MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

A. PRE-ACTIVITY:
   a) PRE-WATER SITE SUFFICIENT TO LIMIT VISIBLE DUST EMISSIONS (VDE) TO 20% OPACITY.
   b) PHASE WORK TO REDUCE THE AMOUNT OF DISTURBED SURFACE AREA AT ANY ONE TIME.

B. DURING ACTIVE OPERATIONS:
   a) APPLY WATER OR OTHER APPROVED SUBSTANCE SUFFICIENT TO LIMIT VDE TO 20% OPACITY.
   b) LIMIT ACTIVITY TO PERIODS OF LOW OR NO WIND, OR CONSTRUCT AND MAINTAIN WIND BARRIERS SUFFICIENT TO LIMIT VDE TO 20% OPACITY.
   c) APPLY WATER OR OTHER APPROVED SUBSTANCE TO UNPAVED HAUL/ACCESS ROADS AND UNPAVED VEHICLE/EQUIPMENT TRAFFIC AREAS SUFFICIENT TO LIMIT VDE TO 20% OPACITY AND MEET THE CONDITIONS OF A STABILIZED UNPAVED ROAD SURFACE.

C. TEMPORARY STABILIZATION DURING PERIODS OF INACTIVITY:
   a) RESTRICT VEHICULAR ACCESS TO THE AREA.
   b) APPLY WATER OR OTHER APPROVED SUBSTANCE SUFFICIENT TO COMPLY WITH THE CONDITIONS OF A STABILIZED SURFACE. IF ANY AREA HAVING 0.5 ACRES OR MORE OF DISTURBED SURFACE AREA REMAINS UNUSED FOR SEVEN OR MORE DAYS, THE AREA MUST COMPLY WITH THE CONDITIONS FOR A STABILIZED SURFACE AREA AS DEFINED IN RULE 8011.

D. CARRYOUT AND TRACKOUT ON PUBLIC ROADS:
   a) ALL VISIBLE CARRYOUT AND TRACKOUT WITHIN 50 FEET OF THE SITE SHALL BE REMOVED AT THE END OF EACH WORKDAY. TRACKOUT BEYOND 50 FEET OR THE SITE SHALL BE REMOVED IMMEDIATELY.
   b) CLEANUP SHALL BE ACCOMPLISHED BY MANUAL SWEEPING OR APPROVED EQUIPMENT AND METHOD AS SPECIFIED BY THE SJVAPCD.
   c) THE USE OF BLOWER DEVICES OR DRY ROTARY BRUSHES OR BROOMS, FOR REMOVAL OF CARRYOUT AND TRACKOUT ON PUBLIC ROADS IS EXPRESSLY PROHIBITED.
   d) ANY PERMITS REQUIRED FOR MUD AND DIRT CLEANUP SHALL BE OBTAINED BY THE CONTRACTOR.

PROJECT STATISTICS

1. PROPERTY LOCATION: SOUTHWEST CORNER OF CITADEL STREET AND MARDI GRAS COURT IN THE CITY OF BAKERSFIELD, COUNTY OF KERN, STATE OF CALIFORNIA SECTION 5 T.30S. R.28E.
2. LEGALLY RESPONSIBLE PERSON: BAKERSFIELD CITY SCHOOL DISTRICT, 1501 FELIZ DRIVE, BAKERSFIELD, CA. 93307, PHONE (661) 631-5883 FAX (661) 631-4501, CONTACT PERSON: RANDY ROWLES
3. QUALIFIED SWPPP PRACTITIONER: (RESPONSIBLE FOR SWPPP IMPLEMENTATION) _____
4. QUALIFIED SWPPP DEVELOPER: (RESPONSIBLE FOR SWPPP PREPARATION) FRED W. PORTER II, PORTER & ASSOCIATES, INC., 1200 21st STREET, BAKERSFIELD, CA 93301, (661) 327-0362
5. PROJECT TYPE: PUBLIC STREET AND PROPOSED SCHOOL CONSTRUCTION EARTHWORK
6. DISTURBED AREA: 25.75 GROSS ACRES
7. AVERAGE DAILY EARTHWORK THROUGHPUT: 5,000 CY (APPROXIMATELY) BASED ON 20 DAYS OF ROUGH GRADING APPROX. 1,000 CY THEREAFTER FOR FINE GRADING, UNDERGROUND CONSTRUCTION, ETC.

NOTE:

CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION FENCING AROUND PERIMETER OF SITE TO RESTRICT UNAUTHORIZED VEHICLE ACCESS.

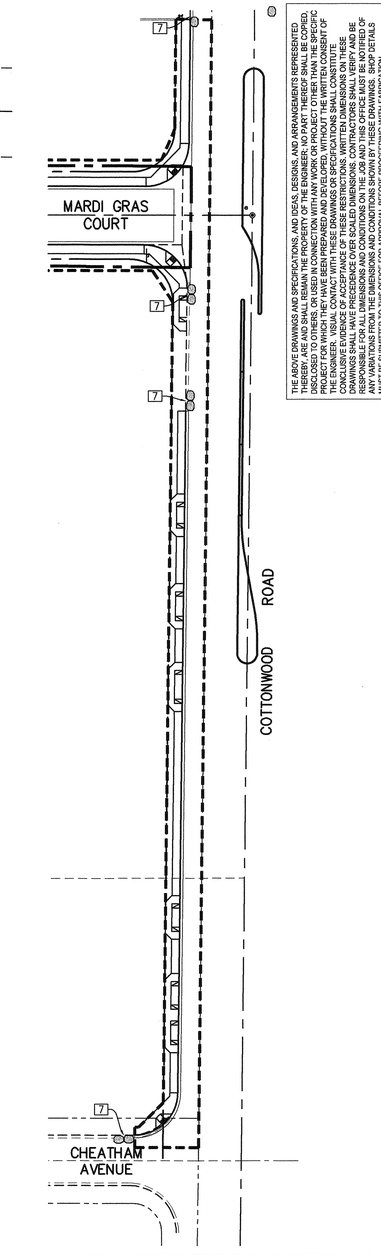
SWPPP NOTES

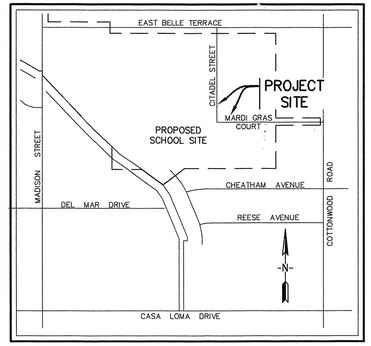
1. INSTALL 20' x 40' GRAVEL ENTRY/EXIT PER BMP TC-1
2. INSTALL 15 MPH SPEED LIMIT SIGN
3. INSTALL STORM DRAIN INLET PROTECTION PER BMP SE-10
4. INSTALL STOCKPILE MANAGEMENT PER BMP WM-3
5. INSTALL FIBER ROLLS PER BMP SE-5 OR SILT FENCE PER BMP SE-1 ALONG BOUNDARIES AS SHOWN FOR PERIMETER CONTROL.
6. INSTALL CONCRETE WASHOUT PER BMP WM-8
7. INSTALL GRAVEL BAGS IN CURB & GUTTER AT PROJECT AND PHASE LIMITS PER BMP SE-6
8. INSTALL NON-STORMWATER BMP'S AS REQUIRED PER BMP NS-8, NS-9, & NS-10.
9. INSTALL MATERIAL MANAGEMENT BMP'S AS REQUIRED FOR PER BMP WM-1, WM-2, & WM-5.
10. INSTALL SANITARY SEPTIC WASTE MANAGEMENT PER BMP WM-9.

CALIFORNIA STORMWATER BMP HANDBOOK

THE FOLLOWING CALIFORNIA STORMWATER CONSTRUCTION BMP'S SHALL BE CONSIDERED A PART OF THESE PLANS AND MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR AND QSP SHALL IMPLEMENT ADDITIONAL BMP'S AS REQUIRED DURING CONSTRUCTION.

BMP NO.	DESCRIPTION	BMP NO.	DESCRIPTION
☒ EC-1	SCHEDULING	☒ TC-2	STABILIZED CONSTRUCTION ROADWAY
☐ EC-2	PRESERVATION OF EXISTING VEGETATION	☐ TC-3	ENTRANCE/OUTLET TIRE WASH
☐ EC-4	HYDROSEEDING	☒ NS-1	WATER CONSERVATION PRACTICES
☐ EC-5	SOIL BINDERS	☒ NS-8	VEHICLE AND EQUIPMENT CLEANING
☐ EC-9	EARTH DIKES AND DRAINAGE SWALES	☒ NS-9	VEHICLE AND EQUIPMENT FUELING
☐ EC-16	NON-VEGETATIVE STABILIZATION	☒ NS-10	VEHICLE AND EQUIPMENT MAINTENANCE
☒ SE-1	SILT FENCE	☒ NS-12	CONCRETE CURING
☐ SE-2	SEDIMENT BASIN	☒ NS-13	CONCRETE FINISHING
☐ SE-3	SEDIMENT TRAP	☒ NS-14	MATERIAL AND EQUIPMENT USE
☒ SE-5	FIBER ROLLS	☒ WM-1	MATERIAL DELIVERY AND STORAGE
☒ SE-6	GRAVEL BAG BERM	☒ WM-2	MATERIAL USE
☒ SE-7	STREET SWEEPING AND VACUUMING	☒ WM-3	STOCKPILE MANAGEMENT
☐ SE-8	SANDBAG BARRIER	☒ WM-4	SPILL PREVENTION AND CONTROL
☒ SE-10	STORM DRAIN INLET PROTECTION	☒ WM-5	SOLID WASTE MANAGEMENT
☒ WE-1	WIND EROSION CONTROL	☒ WM-6	HAZARDOUS WASTE MANAGEMENT
☒ TC-1	STABILIZED CONSTRUCTION ENTRANCE/EXIT	☒ WM-8	CONCRETE WASTE MANAGEMENT
		☒ WM-9	SANITARY/SEPTIC WASTE MANAGEMENT





VICINITY MAP
NO SCALE

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PORTER & ASSOCIATES, INC.
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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: EROSION, SEDIMENT & DUST CONTROL PLAN PHASE 1 DEVELOPMENT

Project Name & Address: INCREMENT 1 OFF-SITE IMPROVEMENTS NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
-	9/29/2017	- -	LGH	-

Agency Approval Stamp:

FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
AC ___ CS ___ SS ___ EN
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):

REGISTERED PROFESSIONAL ENGINEER FRED W. PORTER RCE 33448 CIVIL STATE OF CALIFORNIA

LICENSED ARCHITECT SCOTT E. FLINN No. C 20966 REN. 5-31-19 STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: C5.01

Release: -

J:\3014\SWPPP\dwg\3014-SWPPP.dwg MATT

1" = 40'-0"

40 0 40 80 120

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL COORDINATE AND SCHEDULE TIMING FOR UTILITY SERVICE CONNECTION WITH PGE. ALL SITE GAS PIPING FROM THE STREET CONNECTION TO THE METER SHALL BE PERFORMED BY PG&E AND COORDINATED WITH THE GENERAL CONTRACTOR. TRENCHING EXCAVATION AND BACKFILL SHALL BE BY THE GENERAL CONTRACTOR PER PGE GREEN BOOK STANDARDS.
2. ALL LINES BELOW SLAB ON GRADE TO BE LOCATED AWAY FROM ALL LOAD BEARING FOOTINGS.
3. COORDINATE INSTALLATION OF ALL EQUIPMENT AND PIPING WITH OTHER TRADES PRIOR TO INSTALLATION. ENSURE THAT ALL CONTROL DEVICES, SHUT-OFF VALVES, ETC. ARE ACCESSIBLE FOR MAINTENANCE.
4. SEE INCREMENT NO. 2 SITE PLUMBING PLANS FOR ON-SITE GAS DISTRIBUTION PIPING.

GAS SPECIFICATIONS

NATURAL GAS (G), BURIED:

1. PIPE: POLYETHYLENE 2406 (PE), YELLOW, SDR 11, ASTM D 2513.
2. FITTINGS: POLYETHYLENE 2406 (PE), YELLOW, SDR 11, ASTM D-2513, FUSION TYPE.
3. JOINTS: HEAT FUSION, IN ACCORDANCE WITH ASTM D-2657. B.

FUEL GAS DEMAND - HIGH PRESSURE (HPG)

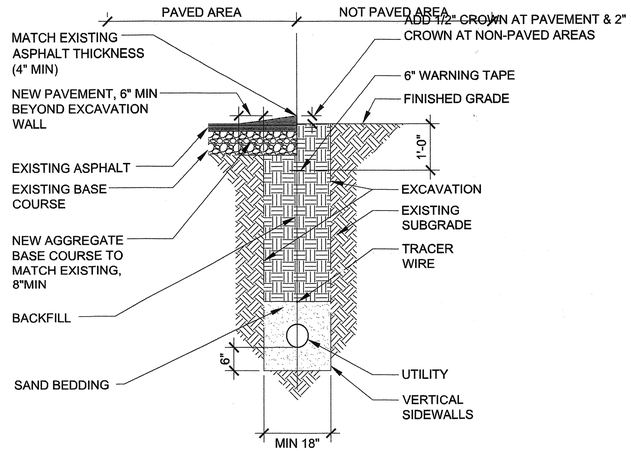
SYSTEM	MBTUH'S	CFH
BLDG A	380	345
BLDG B	3250	2955
BLDG C	600	545
BLDG D	675	614
BLDG E	600	545
BLDG F	675	614
TOTAL	6180	5618
FUEL TYPE	NATURAL GAS	
DISTANCE TO METER FROM MAIN	1270'	
PIPE SIZE REQUIRED	2-1/2"	
PIPE SIZE PROVIDED	2-1/2"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(6) (NFPA 54: TABLE 6.2(b))

2 GAS SERVICE SIZING

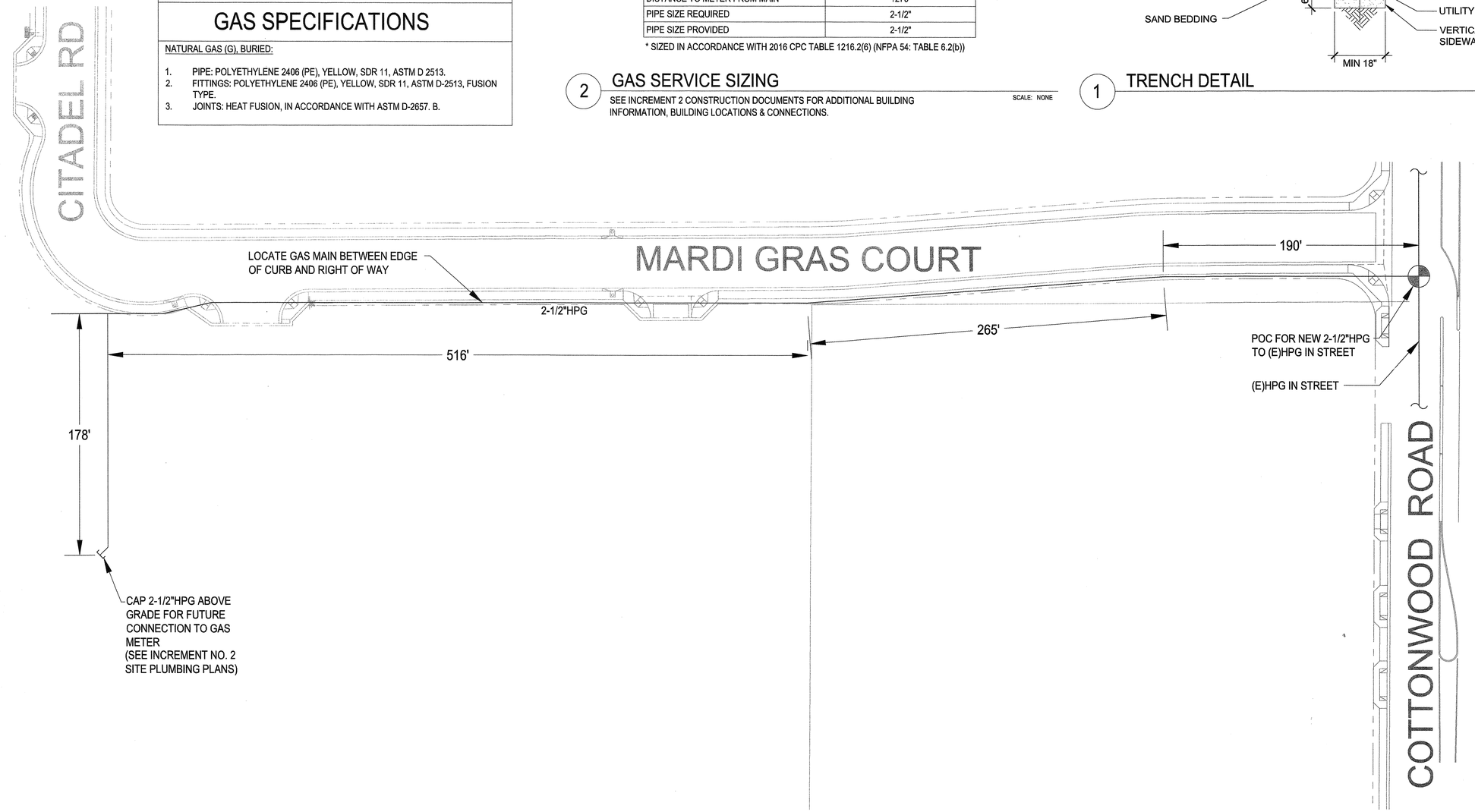
SCALE: NONE

SEE INCREMENT 2 CONSTRUCTION DOCUMENTS FOR ADDITIONAL BUILDING INFORMATION, BUILDING LOCATIONS & CONNECTIONS.



1 TRENCH DETAIL

SCALE: NONE



3 OFF-SITE GAS MAIN PIPING PLAN

SCALE: 1" = 40'

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www.integrateddesigns.com

Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: **OFF-SITE GAS MAIN PIPING PLAN**

Project Name & Address: **INCREMENT 1 OFF-SITE IMPROVEMENTS NEW ELEMENTARY SCHOOL**
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
Date: 12/14/17	BM	BS	BS

Agency Approval Stamp:
FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
AC FLS SS TV
DATE MAR 12 2018
TRACKING #: 63321-300

Stamp(s):

REGISTERED PROFESSIONAL ENGINEER — BRIAN P. STARNES — M 34068 — EXP. 6/30/18 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — CURTIS E. FLINN — No. C 29066 — EXP. 5-31-19 — STATE OF CALIFORNIA

Job No.:

Sheet No.: **P1.01**

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SECTION 16750 – FIRE ALARM SYSTEM

PART 1 - GENERAL

1. GENERAL

1.1 RELATED DOCUMENTS

1.1.1. Related documents shall include drawings and general provisions of the Contract, including general and supplementary conditions and applicable sections of Division 1 and Division 16 specifications.

1.2 SCOPE

1.2.1. This Section shall include guidelines for the furnishing of all labor, equipment, materials, and performance of all operations associated with the installation of the Network Fire Alarm and Smoke Detection System as drawn and specified herein.

1.2.2. The intent of drawings and specifications is to result in a complete functional networked fire alarm and smoke detection system as described herein.

1.2.3. The Contractor shall provide all devices and components required to accomplish this intent whether or not specifically shown or specified.

1.2.4. The complete installation shall conform to the applicable sections of NFPA-72, NFPA-71, local code requirements and the National Electrical Code with particular attention to Article 760.

1.2.5. The work covered by this Section of the Specifications shall be coordinated with the related work as specified elsewhere under project specifications.

1.3 QUALITY ASSURANCE

1.3.1. Each and all components of the Fire Alarm System shall be listed as a product of a single fire alarm system manufacturer under the appropriate category by Underwriters' Laboratories, Inc. (UL), and shall bear the "UL" Label. All control equipment shall be listed under UL category UOJZ as a single control unit. Partial listing shall not be acceptable.

1.3.2. All control equipment shall have transient protection to comply with UL 864.

1.3.3. Work shall be done by a qualified contractor holding a C-10 and other licenses required by authorities having jurisdiction.

1.3.4. Contractor shall show proof that they are an Authorized Distributor for the equipment they are installing and have been trained and certified to install and service the equipment.

1.3.5. Devices shall be UL listed under Standard #497B.

1.3.6. System control shall be UL listed for Power Limited Applications and all circuits shall be marked in accordance with NEC Article 760-23.

1.4 GENERAL SYSTEM REQUIREMENTS

1.4.1. System Requirements

1.4.1.1. The Fire Detection System shall be responsible for continually supervising and monitoring by zone, the following initiating, signaling and monitoring circuits designated as:

- Manual fire pull stations
- Smoke and heat detectors, including those installed under other Sections.
- Alarm signaling circuits (alarm horns, speakers and visual alarms.)

1.1.1.1. The Fire Alarm System configuration for this project shall be as follows:

- Horns shall be used for the Fire Alarm signaling. Activation of duct smoke detectors in the Air Handling ducts shall be annunciated at the Annunciator Panel in the Main Office. The smoke detectors and associated auxiliary relays shall be specified under this Section but will be indicated on the Drawings and installed under Division 16000. Control of the air handling units through the smoke detectors and associated relays shall be carried out under Division 16000. Extension of wiring from the Auxiliary relays to the Fire Alarm Control Panel and annunciator shall be performed under this section.

1.1.1.2. One contractor shall furnish and install a complete Fire Alarm and Smoke Detection System as described herein and drawn

1.1.1.3. The contractor shall wired connect and make operational each and all components of the system.

1.1.1.4. The system shall include:

- Sufficient Fire Alarm System Control Panels (FACPs)
- Fire Alarm System Network control equipment
- Remote Annunciators
- Manual Stations
- Automatic Fire Detectors
- Smoke Detectors
- Alarm Indicating Appliances
- Miscellaneous Components
- Wiring
- Terminations
- Raceway System provided by the Electrical Contractor.
- All other necessary material for a complete operating system.

1.1.1.5. The system shall meet all national and local codes.

1.1.2. Fire Alarm System Supplier

1.1.2.1. The fire alarm shall be supplied and installed by a Distributor/Contractor authorized by the Fire Alarm System Manufacturer. The supplier's personnel shall be factory trained and certified.

1.1.2.2. The fire alarm system supplier shall provide point to point wiring diagrams and equipment data sheets for submittal to the local authority.

1.1.3. System Manufacturer

1.1.1.1. The system and components shall be supplied by one manufacturer who shall have produced similar systems for a period of at lesst three (3) years.

1.1.1.2. The manufacturer shall be able to refer to similar installations rendering satisfactory service.

1.1.1.3. The equipment and services described in this Specification represent those supplied and supported by Gamewell Worldwide, Ashland, Massachusetts and their Authorized Distributor, unless noted otherwise.

1.1.2. System Software

1.1.2.1. The system shall be capable of self-programming upon initialization.

1.1.2.2. The system shall be capable of on-site programming to accommodate system expansion and facilitate changes in operation.

1.1.2.3. All software operations shall be stored in a nonvolatile programmable memory within the FACP.

1.1.2.4. Loss of primary and secondary power shall not erase the instructions stored in memory.

1.1.2.5. System programming shall be password protected and shall include full upload and download capability.

1.1.2.6. The system shall feature full flexibility for selective input/output control functions based on ANDing, ORing; NOTing, timing, and special coded operations shall also be incorporated in the resident software programming of the system.

1.1.2.7. Resident software shall allow for full configuration of initiating circuits. The system shall require no additional hardware to change from sensing normally open contact devices to sensing normally closed contacted devices or vice versa. Nor shall the system require additional hardware to change from sensing normally open contact devices to sensing—and distinguishing between—a combination of current limited and non-current limited devices on the same circuit. Nor shall the system require additional hardware for changing from a non-verification circuit to a verification circuit or vice-versa.

1.1.2.8. There shall be no limit, other thnn maximum system capacity, to the number of intelligent/analog devices which may be in alarm simultaneously.

1.1.2.9. The system shall have the capability of recalling alarm and trouble conditions in chronological order for the purpose of recreating an event history.

1.2 DISTRICT APPROVAL

1.2.1. All fire alarm, signal and control equipment shall be approved by the District in addition to other required approvals.

Certification: Installation of the Fire Alarm System shall not be started until Drawings, including State Fire Marshall Listing numbers of all fire alarm components, are submitted to and approved by the Architect and/or State Fire Marshal. Written certification by the fire alarm equipment distributor or manufacturer shall be submitted to the Architect stating that the system and its component parts are as "approved and listed" by the State Fire Marshall and that

1.1.1. the installation conforms in all respects to the requirements set forth in Article 72, Title 24, California Administrative Code.

1.2 ALARM OPERATION

1.2.1. The actuation of any approved alarm initiating device shall automatically initiate the following operations where furnished as part of the system:

1.2.1.1. All audible alarm indicating appliances within corresponding building shall sound a fire alarm signal until the Signal Silence key is depressed.

1.2.1.2. All visible alarm indicating appliances in the corresponding building shall flash continuously until the Reset key is depressed.

1.2.1.3. The Network System Monitor shall indicate type and location of all events.

1.2.1.4. The off-site central monitoring station shall be notified automatically.

1.2.1.5. Shutdown of the corresponding HVAC system equipment shall occu until the System reset key is depressed.

1.2.1.6. Activation of all programmed outputs assigned to the initiating device shall occur until the System Reset key or the Signal Silence key is depressed.

1.2.1.7. Any subsequent zone alarm shall reactivate the alarm indicating appliances.

1.3 ALARM INDICATION

1.3.1. The alarm shall be displayed on a 160 character (4x40) LCD display on the local Fire Alarm Control Panel, and, where applicable, the remote annunciator. The top line of 40 characters shall be the point label and the second line shall be the device type identifier.

1.3.2. The system alarm LED shall flash on the control panel and the remote annunciator until the alarm has been acknowledged. Once acknowledged, this same LED shall latch on.

1.3.3. A subsequent alarm received from another zone shall flash the system alarm LEI on the control panel and remote annunciator. The LCD display shall indicate the new alarm information.

1.3.4. A pulsing alarm tone shall occur within the local building control panel, and where applicable, the remote annunciator until the event has been acknowledged.

1.3.5. A manual evacuation (drill) switch shall be provided to operate the alarm indicating appliances without causing other control circuits to be activated. However, should a true alarm occur, all alarm functions would occur as describe previously.

1.3.6. The system shall have a single key that will allow the operator to display all alarms, troubles, and supervisory service conditions including the time of each occurrence.

1.3.7. Any momentary opening of an initiating or indicating appliance circuit wiring shall cause an audible signal to sound at the Building Fire Alarm Panel, and where applicable, the remote annunciator for four seconds indicating a trouble condition.

1.1.1. The actuation of the "enable walk test" program at the control panel shall activate the "Walk Test" mode of the system, which shall initiate the following events:

1.1.1.1. The off-site central monitoring station connection shall be bypassed.

1.1.1.2. Control relay functions shall be bypassed.

1.1.1.3. Walk test shall be selectable by circuit.

1.1.1.4. Alarms received on normal circuits shall cause the control panel to go into alarm and override the walk test mode.

1.1.1.5. The control panel shall show a trouble condition.

1.1.1.6. The alarm activation of any initiation device shall cause the audible signals to activate for two seconds.

1.1.1.7. The panel shall automatically reset itself after signaling is complete.

1.1.1.8. The control panel shall automatically return to normal condition if there is no activity on a walk test circuit for a period of 30 minutes.

1.2 SUPERVISION

1.2.1. The system shall contain Class "B" independently supervised initiating device circuits. The alarm activation of any initiation circuit shall not prevent the subsequent alarm operation of any other initiation circuit.

1.2.2. Each independently supervised circuit shall include a discrete LED readout to indicate disarrangement conditions per circuit.

1.2.3. The incoming power to the system shall be supervised so that any power failure must be audible and visually indicated at the control panel and the remote annunciator. A green "power on" LED shall be displayed continuously while incoming power is present.

1.2.4. The system batteries shall be supervised so that a low battery condition or disconnection of the battery shall be audibly and visually indicated at the control panel and the remote annunciator.

1.2.5. The system shall have provisions for disabling and enabling all circuits individually for maintenance or testing purposes.

1.3 POWER REQUIREMENTS

1.3.1. Each control panel or console shall receive 120 VAC power, 60 hz., 20A (as noted on the plans) via a dedicated circuit.

1.3.2. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of 120 VAC power in a normal supervisory mode for a period of 24 hours with five minutes of alarm indication at the end of this period. The system shall automatically transfer to the standby batteries upon power failure. All battery charging and recharging operations shall be automatic. Batteries, once discharged, shall recharge at a rate to provide a minimum of 70% capacity in 12 hours.

1.3.3. All circuits requiring system operating power shall be 24 VDC and shall be individually fused at the control panel.

1.4 SHOP DRAWING AND PRODUCT DATA

1.4.1. The system shop drawings shall include complete wiring diagrams for all components of the project. Generic wiring diagrams, which do not apply specifically to the project, are not acceptable. Product data sheets covering all system devices shall be furnished with shop drawings.

PART - 2 PRODUCTS

2.1 Manufacturer and system components

2.1.1 Manufacturer
Acceptable fire alarm system manufacturers and model no. are specified on plans

PART - 3 EXECUTION

3. 1 INSTALLATION

3.1.1 The contractor shall provide and install the system in accordance with the plans and specifications, all applicable codes and the manufacturer's recommendations.

3.1.2 The Fire Alarm panel my be located with the telephone equipment. Annunciators must be visable in the Administration Office.

3.1.3 Detector Installation

3.1.3.1 Detector locations shall be no closer than 4' from air supply outlets, nor in berms pockets deeper than 12". No detector shall be purposely recessed in a ceiling.

3.1.3.2 Duct type smoke detectors shall be provided under this section of the specification for mounting by the mechanical contractor. All conduit, wire and final connections shall be performed by the Division 16 contractor.

3.1.4 Programming

3.1.4.1 The Contractor shall perform all programming of system including local panel programming and network programming.

3.1.4.2 The Contractor shall perform the necessary assigning of system points.

3.1.5 Wiring

3.1.5.1 The contractor shall furnish and install in accordance with manufacturer's instruction all wiring, conduit, and outlet boxes for installation of a complete system as described herein and drawn.

3.1.5.2 Wiring for the fire alarm system , in general, shall consist of a minimum of #18 2 conductor FPL type conductors for data loop initiating circuits. A minimum of #20 2 conductor shielded for the Serial Data Communication Circuits. A minimum of #14 THHN/THWN type conductors for indicating NAC circuits.

3.1.5.3 All wiring shall meet NEC 760 for fire alarm system wiring. All wiring shall be tagged at junction points and shall test free of grounds and shorted between conductors. All additional labor costs incurred by the Fire Alarm System Technicism to clear wiring faults shall be charged to the installing contractor.

All final terminations of the field wiring shall be made by or under the direct supervision of the Fire Alarm System Manufacturer's representative. Any damage to the panel as a result of the contractor terminating wires or powering up the panel without the supervision

3.1.3.1 of an authorized representative of the Fire Alarm Panel Manufacturer shall be charged to the installing contractor.

3.1.4 Miscellaneous

3.1.4.1 All junction boxes shall be painted red and labeled "Fire Alarm." Color coded wiring shall be maintained throughout the installation.

3.1.4.2 Installation of equipment and devices relevant to other work in the contract shall be closely coordinated with the appropriate subcontractors.

3.1.4.3 The Contractor shall clean all dirt and debris from the interior and exterior of the fire alarm equipment after completion of the installation.

3.1.4.4 The manufacturer's Authorized and Certified Representative shall provide on-site supervision of installation.

3.2 ON-SITE START-UP

3.2.3 System Check

3.2.3.1 Prior to energizing any part of this system, the factory authorized and certified representative shall check thoroughly the installation, and perform pre-start checks. This representative shall check all points, fire alarm panels and complete network to ensure proper operation, and make any needed repairs and/or replacements required. Sufficient time shall be included in the project bid to cover all required start-up assistance and testing.

3.2.4 Testing

3.2.4.1 The Contractor shall test fully the completed fire alarm system in accordance with NFPA-72H in the presence of the Owner's Representative and under the direction of the factory authorized representative.

3.2.4.2 Testing shall be provided as required by the local Fire Marshal or Authority Having Jurisdiction (AHJ).

3.2.4.3 Upon successful completion of tests, the Contractor shall so certify in writing to the Owner's Representative.

3.2.4.4 Alarm horn sound levels shall be tested during Owner's normal operating conditions to ensure emergency signaling is of an approved sound level over normal ambient noise. The test shall be performed during a 90-day period following the above "Fire Marshal" test on a date to be selected by the Owner.

3.3 TRAINING

3.3.3 Demonstration

3.3.3.1 A factory authorized representative shall demonstrate the the fire alarm system.

3.3.3.2 The demonstration shall simulate possible operating conditions and alarms.

3.3.4 Scope of Training

3.1.3.1 Training shall include documentation and hands-on exercise necessary to enable the Owner's Representative to assume full programming and operating responsibility.

3.1.4 Project Bid

3.1.4.1 Contractor shall include the costs of schooling for sending two District employees to the factory to become Certified for Maintenance on the Fire Alarm Panel, software and accessories. The District will provide transportation lodging and meals during for the training.

3.1.4.2 The project bid shall include sufficient time for required initial training and follow-up assistance for the school personnel.

3.1.5 Technical Support

3.1.5.1 Technical support and service by factory trained personnel shall be available from the manufacturer's representative.

3.2 CENTRAL STATION

3.2.3 The system shall be connected to an approved off-site central monitoring station with equipment and installation methods as required and approved by local fire department.

3.2.4 A three (3) year renewable contract with the central station shall be included beginning the day the system is successfully tested and completed.

3.2.5 The cost of the Central Station tie shall be broken out separately from the fire alarm system bid.

3.3 WARRANTY

3.3.3 The Installing contractor shall warranty all wiring to be free from inherent mechanical and electrical defects for a period of one year from installation.

3.3.4 The Manufacturer's Representative shall provide the Owner's Representative and Certification of Installation for the entire system certifying that the system was installed and is operating properly and in accordance with these specifications.

3.3.5 The Installing Contractor shall provide the Owner with a three (3) year Maintenance Proposal upon completion of the Project.

End of Section 16750

F.A SYSTEM SCOPE OF WORK

1. NO FIRE ALARM WORK IN THIS INCREMENT NO.1 OFF SITE IMPROVEMENT PROJECT. FA NOTES AND SPECIFICATION ARE ONLY FOR REFERENCE.

FIRE ALARM NOTES

1) APPLICABLE STANDARD 2016 NFPA 72
2) INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.
3) COMPLETION OF THE INSTALLATION OF THE SYSTEMS, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.
4) A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
5) ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
6) DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND /OR TESTING.
7) PENETRATIONS THROUGH RATED ASSEMBLIES, REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7. UL OR OTHER LAB TESTING CRITERIA. APPROVED TYPE OF MATERIALS SHALL BE IDENTIFIED WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.
8) WALL MOUNTED VISUAL NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM FROM FINISHED FLOOR. ENTIRE LENS SHALL BE WITHIN THIS RANGE.
9) WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.
10) AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (Dba) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 Dba ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEASE 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPANCIES SPACE WITHIN THE BUILDING.
11) AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.
12) THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
13) VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELA. VISUAL DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
14) UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVAL FOR WET LOCATIONS.
15) ALL FIRE ALARM WIRING SHALL BE FLP OR FPLP POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.
16) PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. ALL BOXES TO BE SIZED PER CEC.
17) SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
18) ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
19) FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
20) A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL". CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
21) THE INSTALLING CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1.
22) CONTROL PANELS, REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48"
23) THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
24) SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
25) OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

MEP COMPONENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAILS IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A 1.26 AND ASCE 7–10 CHAPTER 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHTING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7–10 SECTION 13.3 AS DEFINED IN ASCE 7–10 SECTION 12.6.8, 13.6.5.6 AND 2016 CBC, SECTION 1616A.1.23, 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENT ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., SMACNA OR OSHPD GPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEM (E):

MP☐ MD☐ PP☐ E☑ – OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP☐ MD☐ PP☐ E☐ – OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE–APPROVAL (OPM #) #_____

MP☐ MD☐ PP☐ – OPTION 3: SHALL COMPLY WITH SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA, FASTENERS AND ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL _____ AND CONNECTION LEVEL _____ FOR THE PROJECT AND CONDITIONS.

ELECTRICAL GENERAL NOTES

1. ELECTRICAL CONTRACTOR SHALL APPRISE HIMSELF OF ALL EXISTING CONDITIONS AT SITE WHICH INCLUDING OVERHEAD AND UNDERGROUND UTILITY SERVICE SUCH AS POWER, TELEPHONE, CATV, GAS, WATER AND SEWER; PROVIDE MINIMUM WORKING CLEARANCE PER UTILITY COMPANY REQUIREMENT BEFORE STARTING WORK.
2. ELECTRICAL CONTRACTOR SHALL ARRANGE A MEETING WITH LOW VOLTAGE CONTRACTORS (FIRE, SECURITY, TELEPHONE, COMPUTER AND CATV), REVIEW THEIR EQUIPMENT AND DRAWINGS, INCLUDING ALL ELECTRICAL REQUIREMENT IN HIS SCOPE OF WORK PRIOR TO BID.
3. THE LAYOUT FOR THE POWER, TELEPHONE AND COMMUNICATION UNDERGROUND SERVICE IN THIS DRAWING IS ONLY FOR PLAN CHECK PURPOSE, AND HAS NOT BEEN APPROVED BY THE UTILITY COMPANIES. IT IS THE RESPONSIBILITY FOR THE ELECTRICAL CONTRACTOR TO CONTACT THE UTILITY COMPANIES FOR RULE 16 AND ALL OTHER APPROVAL CONSTRUCTION DRAWINGS PRIOR TO INSTALLATION.
4. ALL EQUIPMENT TO HAVE TESTING LABORATORY LABEL ATTACHED. (UL, OSA, ...)
5. GROUND ALL ELECTRICAL EQUIPMENT AS PER TITLE 24 AND CALIFORNIA ELECTRICAL CODE (CEC), SECTION 250–50.

SEISMIC ANCHORAGE

1. TO COMPLY WITH 2016 CBC, TITLE 24, SECTION #1632A.
2. WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ELECTRICAL ENGINEER AND THE FIELD ENGINEER OF THE DIVISION OF THE STATE ARCHITECT.

CODE RULES AND REGULATIONS

ALL WORK AND MATERIAL SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE STATE FIRE MARSHAL, THE CALIFORNIA ELECTRICAL CODE; THE SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY AND OTHER APPLICABLE STATE LAWS OR REGULATIONS. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

DIVISION OF THE STATE ARCHITECT APPLICABLE CODES AND STANDARDS:

2016 CALIFORNIA ELECTRIC CODE (CEC).
2016 CALIFORNIA FIRE CODE (CFC).
2016 TITLE 19 (CCR), PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
2016 NFPA 72 (CALIFORNIA AMENDED) – NATIONAL FIRE ALARM CODES. POLICY #95–03, FIRE AND LIFE SAFETY, DIVISION OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES.

U.S.A. - UNDERGROUND SERVICE ALERT CALL BEFORE YOU DIG: 1-800-642-2444

THE LOCATION OF EXISTING UNDERGROUND UTILITIES WERE TAKEN FORM SOURCES BELIEVED TO BE RELIABLE HOWEVER, THEY HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THIS ENGINEER. THE CONTRACTORS SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTIFY OWNER 72 HOURS PRIOR TO ANY EXCAVATION

APPLICABLE CODES:

TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHALL REGULATIONS
TITLE 24 CCR, PART 1 – 2016 BUILDING STANDARDS ADMINISTRATIVE CODE
TITLE 24 CCR, PART 2 – 2016 CALIFORNIA BUILDING CODE, VOL. 1 & 2 (CBC) (2012 IBC, AS AMENDED BY CA.)
TITLE 24 CCR, PART 3 – 2016 ELECTRICAL CODE (CEC) (2011 NEC, AS AMENDED BY CA.)
TITLE 24 CCR, PART 4 – 2016 CALIFORNIA MECHANICAL CODE (CMC) (2012 IAPMO UMC, AS AMENDED BY CA.)
TITLE 24 CCR, PART 5 – 2016 CALIFORNIA PLUMBING CODE (CPC) (2012 IAPMO UPC, AS AMENDED BY CA.)
TITLE 24 CCR, PART 6 – 2016 CALIFORNIA ENERGY CODE
TITLE 24 CCR, PART 7 – 2016 CALIFORNIA ELEVATOR SAFETY CONSTRUCTION CODE
TITLE 24 CCR, PART 9 – 2016 CALIFORNIA FIRE CODE (CC) (2012 IFCM AS AMENDED BY CA.)
TITLE 24 CCR, PART 12– 2016 CALIFORNIA REFERENCED STANDARDS (PARTIAL LIST – SEE CBC CH. 35 AND CFC CH. 45)
2016 NFPA 13, INSTALLATION OF SPRINKLER SYSTEM (CA. AMENDED)
2016 NFPA 14, DRY CHEMICAL EXTINGUISHING SYSTEMS
2016 NFPA 17A, WET CHEMICAL EXTINGUISHING SYSTEMS
2016 NFPA 20, INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION
2016 NFPA 25, INSPECTION, TESTING, MAINTENANCE OF WATER–BASE FIRE PROTECTION SYSTEMS (CA. AMENDED)
2016 NFPA 72, NATIONAL FIRE ALARM CODE (CA. AMENDED); SEE UL STD 1971 FOR "VISUAL DEVICES"

CONSULTING ENGINEERS

JOHN CHONG ENGINEERING

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Revision:	Revision Description:	Rev. Date:
Revision:	Revision Description:	Rev. Date:

Sheet Title: DETAILS AND NOTES

Project Name & Address:
INCREMENT 1 OFF-SITE IMPROVEMENTS
NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAZES COURT

Issue Date:	Date:	Designer:	DR:	FC:
00/00/17	09/29/17	J CHONG	J CHONG	—

Agency Approval Stamp:

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03–118394
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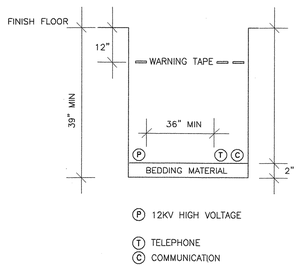
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REN. 5-31-19
STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: E0.01

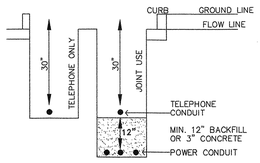
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1 DRY UTILITY TRENCH DETAIL

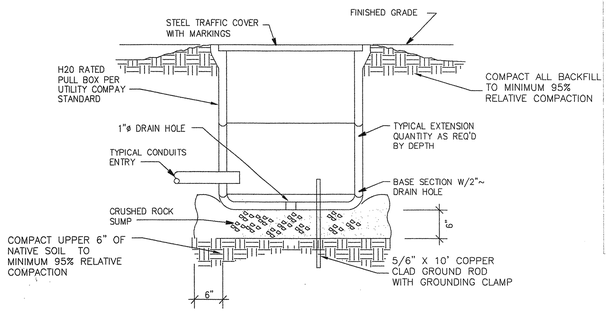
NTS

1. ALL CONDUIT BENDS TO HAVE A MINIMUM RADIUS IN FEET EQUAL TO DIAMETER OF CONDUIT IN INCHES. 2" DIAMETER = 24" RADIUS, ETC.
2. NO CONDUIT RUN TO HAVE OVER TWO 90° BENDS, IF NECESSARY TO HAVE OVER TWO 90° BENDS, INSERT ACCESSIBLE PULL BOX IN RUN. CONTACT TELEPHONE ENGINEER FOR PULL BOX SIZING.
3. ALL CONDUIT SHALL BE LEFT CLEAN, DRY, AND FREE OF DEBRIS OR OTHER OBSTRUCTIONS. A PULL LINE EQUIVALENT TO NO. 14 AWG-3/8" POLYPROPYLENE.
4. APPROVED PLASTIC CONDUIT PVC SCH. 40 PTS 66 AND ABS "D.B." PTS 77. CONDULENTS, PLUMBER'S FITTING, WATER AND GAS PIPES MUST NOT BE USED.
5. CONDUIT TERMINATED ON A POLE MUST BE TURNED UP 1' ABOVE FINISH GRADE, WITH POLE STRAPS, IN THE OPPOSITE QUADRANT FROM ANY POWER SERVICES. (SEE DETAIL OF POLE FOR TERMINATION).
6. CONDUIT PLACED IN SAME TRENCH WITH POWER CONDUIT MUST BE SEPARATED BY NOT LESS THAN 12" OF WELL PACKED DIRT OR 3" OF CONCRETE, AND HAVE NOT LESS THAN 30" OF COVER, FROM GUTTER FLOW LINE.
7. THE TELEPHONE COMPANY RESERVES THE RIGHT TO REFUSE TO USE CONDUIT THAT DEVIATED FROM PLANS AND SPECIFICATIONS.



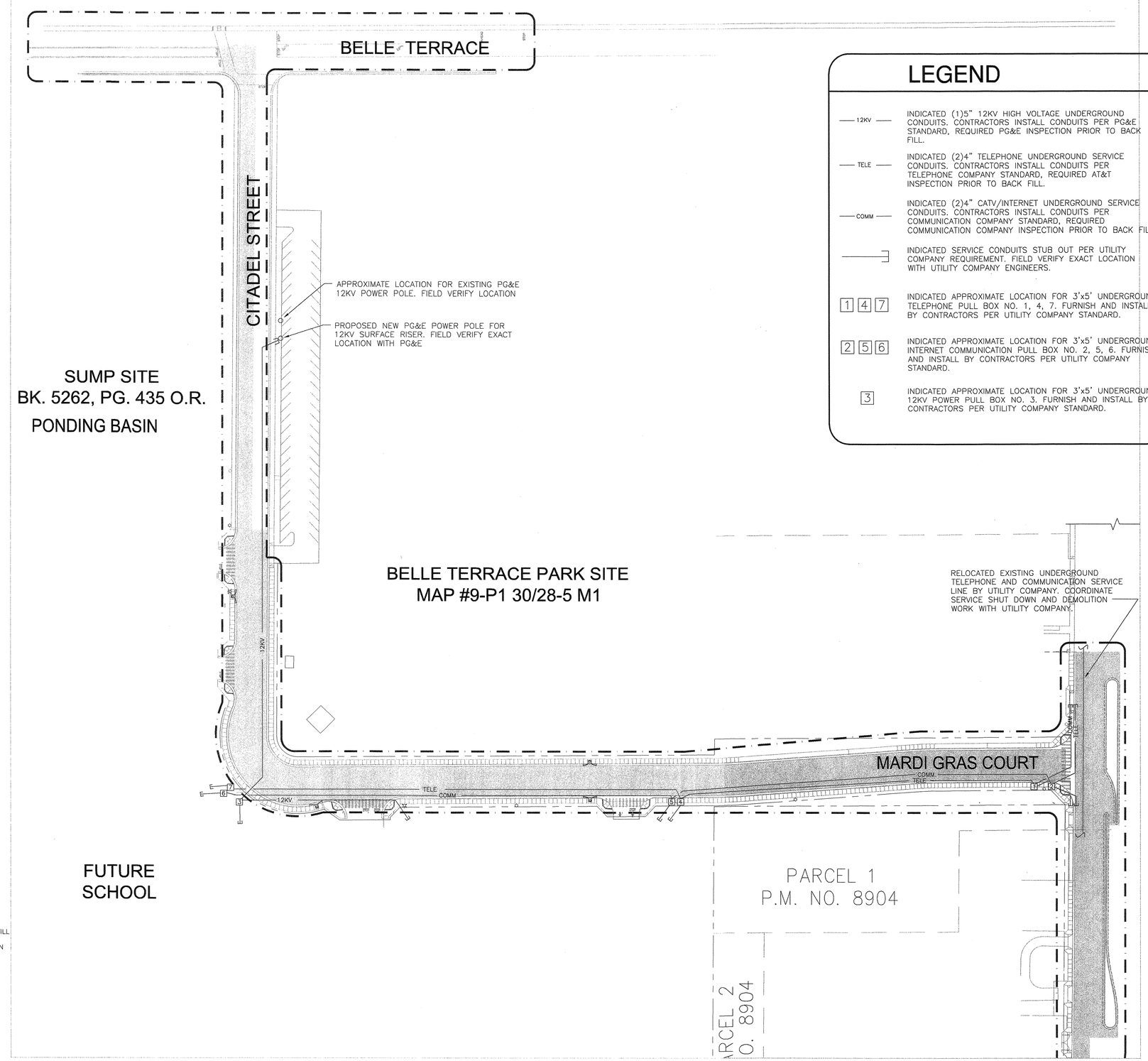
2 UNDERGROUND TELEPHONE TRENCH DETAIL

NTS



3 PULL BOX DETAIL

N.T.S



LEGEND

—— 12KV ——	INDICATED (1)5" 12KV HIGH VOLTAGE UNDERGROUND CONDUITS. CONTRACTORS INSTALL CONDUITS PER PG&E STANDARD, REQUIRED PG&E INSPECTION PRIOR TO BACK FILL.
—— TELE ——	INDICATED (2)4" TELEPHONE UNDERGROUND SERVICE CONDUITS. CONTRACTORS INSTALL CONDUITS PER TELEPHONE COMPANY STANDARD, REQUIRED AT&T INSPECTION PRIOR TO BACK FILL.
—— COMM ——	INDICATED (2)4" CATV/INTERNET UNDERGROUND SERVICE CONDUITS. CONTRACTORS INSTALL CONDUITS PER COMMUNICATION COMPANY STANDARD, REQUIRED COMMUNICATION COMPANY INSPECTION PRIOR TO BACK FILL.
——⊐	INDICATED SERVICE CONDUITS STUB OUT PER UTILITY COMPANY REQUIREMENT. FIELD VERIFY EXACT LOCATION WITH UTILITY COMPANY ENGINEERS.
1 4 7	INDICATED APPROXIMATE LOCATION FOR 3'x5' UNDERGROUND TELEPHONE PULL BOX NO. 1, 4, 7. FURNISH AND INSTALL BY CONTRACTORS PER UTILITY COMPANY STANDARD.
2 5 6	INDICATED APPROXIMATE LOCATION FOR 3'x5' UNDERGROUND INTERNET COMMUNICATION PULL BOX NO. 2, 5, 6. FURNISH AND INSTALL BY CONTRACTORS PER UTILITY COMPANY STANDARD.
3	INDICATED APPROXIMATE LOCATION FOR 3'x5' UNDERGROUND 12KV POWER PULL BOX NO. 3. FURNISH AND INSTALL BY CONTRACTORS PER UTILITY COMPANY STANDARD.

OFF-SITE ELECTRICAL UTILITY PLAN

NEW SCHOOL INCREMENT #1

SCALE: 1" = 60'-0"

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Revision:	Revision Description:	Rev. Date:	Revision:	Rev. Date:

Sheet Title: OFF-SITE ELECTRICAL UTILITY PLAN

Project Name & Address: INCREMENT 1 OFF-SITE IMPROVEMENTS NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL STREET & MARDI GRAZS COURT

Issue Date:	Designed:	Dr:	Pc:
00/00/17	J CHONG	J CHONG	--
Date: 09/29/17			

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