City of Morgan Hill

Improvement Plans for

2025 Morgan Hill Water Main Replacement Project

For use in conjunction with the Project Specifications, the Standard Details of the City of Morgan Hill, and the Standard Plans and Specifications of the State of California Department of Transportation,

General Notes:

1. Temporary Benchmark - Based on a City approved benchmark as shown on these plans.
2. All existing elevations shall be field verified by contractor unless otherwise noted.
3. All survey monuments shall be installed at locations shown on the corresponding final map before acceptance of the subdivision.
4. Contractor shall not destroy existing permanent survey monuments.
5. All work shall conform to the latest edition of the City of Morgan Hill Standard Details for Construction which are hereby made a part of these plans. Deviations from the Standard Details must be approved by the City Engineer.
6. Developer shall arrange for a pre-construction meeting with the City Engineer (Municipal Code 17.32.250b) prior to commencing any construction. An encroachment permit shall be obtained from the Public Works Department upon completion of said meeting and prior to construction of any improvements within an existing or offered for dedication right-of-way, public utility easement or public service easement.
7. A grading permit shall be obtained from the city of Morgan Hill Building Division prior to any grading of building pads. Applicant for the grading permit shall provide a plan review letter from the Soils Engineer. A grading permit does not give contractor permission to commence off-site (street) grading. Only upon City approval of the improvement plans and completion of a pre-construction meeting, shall contractor commence off-site grading.
8. Contractor shall notify the Public Works Department 48 hours prior to commencement of any work phase. At that time, an "Inspection Request Form" shall be completed to ensure proper scheduling of an inspection with the City Engineer's Representative.
9. Contractor shall preserve all surrounding property by confining operations to within the "Limits of Work". Contractor shall be responsible for maintaining access for all adjoining residents, places of business, and properties at all times and in a safe manner. Contractor shall make proper notification at least 24 hours in advance of any interruption in access or service to the above property owners as well as to the City Engineer's Representative.
10. Contractor shall only use equipment provided with a spark arrestor device to reduce a potential fire hazard.

11. **Right of Modification:**

Approval of this plan does not release Subdivider of the responsibility for correction of mistakes, errors, or omission, contained therein. If during the course of construction, public interest requires a modification of or a departure from these improvement plans or the City Standard Details for Construction, the City Engineer shall have the authority to require such modifications and departures and to specify the manner in which the same is to be made.

12. **Off-Site Water & Dust Control:**

Contractor shall provide a water truck onsite at all times. Contractor will be allowed to draw water from the City of Morgan Hill Water Distribution System only after obtaining a hydrant meter from the Public Works Department and an inspection of the water truck for a proper backflow device or "air-gap" filling pipe. Contractor shall keep down dust from construction activity to the maximum extent possible. Contractor shall clean all existing streets, curbs, gutters, and sidewalks affected by the project at the end of each working day.

13. **Material Storage:**

No material shall be stored near the edge of pavement, traveled way, sidewalk, driveway, or shoulder line which may create a hazard for vehicular and pedestrian traffic. Refer to SWPPP Best Practices.

14. **Traffic Control:**

Contractor shall submit a traffic control plan for approval to the Public Works Department a minimum of 5 days prior to any work within an existing public street. The plan shall be signed by a licensed Traffic Engineer when it involves an arterial street. Contractor shall provide all necessary traffic control in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) while working within the public right-of-way. Two traffic lanes (11' min.) shall be open to vehicular traffic during all hours, weekends, and holidays. One lane one-way traffic may be permitted under the control of not less than 2 (two) competent flagmen during construction operations. Street closures and detours shall only take place upon City Engineer approval and Police Department coordination.15. **Trench Excavation:**

Contractor shall exercise diligence in reviewing the approved Soils Report and other available resources to familiarize himself/herself with the soil conditions to be encountered in the course of work identified in these plans. Contractor shall not cause damage to adjacent trees or existing structures above or below grade during trench excavation. All rocks, boulders, and large stones encountered shall be removed to provide a clearance of 6 inches around the pipe. The trench bottom shall be refilled to grade with sand, pea gravel, or other approved granular material. Clean 1/4" or 1/2" pea gravel shall be used in areas of moist condition, or where the soil has a history of sub-surface water. If the bottom of the trench is found to consist of wet or unstable material incapable of properly supporting the pipe, the material shall be removed to a minimum depth of 12 inches below the unstable layer for the full width of the trench and replaced with approved granular material. Trench excavation material deposited adjacent to the trench shall be placed and located to prevent spillage into the open trench.

16. **Trench Safety:**

It shall be Contractor's responsibility to provide all necessary trench safety measures for excavations. All trench safety measures shall be in accordance with the latest CAL-OSHA guidelines. Contractor shall provide evidence of a CAL-OSHA trenching permit at the pre-construction meeting.

17. Excavations within the public right-of-way shall be backfilled, compacted, and temporarily paved with cold mix "cut back" type A.C. to allow for vehicular and pedestrian traffic prior to 4:00 P.M. The City also requires the use of hot mix "cut back" type A.C. from the months of Oct. thru May. The use of trench plates is allowed, provided the Contractor covers all edges of the plates with cold mix material on the city's arterial streets trench plates need to be recessed such that the plates are flush with the existing pavement. It shall be the Contractor's responsibility to maintain daily, including weekends, the amount of material necessary to maintain the trench surface flush with the existing street or sidewalk. In addition, the Contractor shall respond to and correct shifting trench plates regardless of the time of day. If Contractor fails to correct sinking backfill material or shifting trench plates in a timely manner, City shall reserve the right to correct the problem and back charge the contractor.

18. **Joining Existing Pavement:**

Existing pavement which is to be joined by new pavement shall be saw cut vertical to provide straight, true and neat joints. Overlapping of existing pavement without saw cutting or grinding shall not be permitted. The vertical edges shall be tacked prior to paving. Terminals of all surfacing indicated on the plans shall join any existing surface in a smooth butt joint. Conform paving by method of abrasive grinding will be allowed upon approval of the City Engineer.

19. **Sanitary Sewers:**

All manholes, sewer mains, and laterals must pass a leakage test as described in the City of Morgan Hill Standard Details for Construction. After all backfill, testing, and pavement restoration has been completed, the contractor shall flush and clean all sewer lines 24 inches or less in diameter by the "Wayne Ball Method". After the leakage test, but prior to paving, a television inspection (w/Electronic Copies) shall be performed at all locations of newly installed sewer mains at contractor's expense. The underground contractor must keep an accurate record of manholes and the distance between them and each wye branch lateral, and their direction. A Hydro Flush and Wayne Ball method must be completed.

20. Before any upstream sewers are constructed, the contractor shall verify the elevation and location of existing sewer lines to be connected.
21. The end of each new lateral shall be marked as shown in Detail S-2. The concrete contractor shall stamp an "S" on the face of curb directly above the lateral.

22. **Water Lines:**

Contractor shall not turn off or on any valves belonging to the City's water system. Only Department of Public Works personnel shall open the necessary valves to connect new lines. Failure to follow this requirement shall be considered an "unlawful connection" and may result in issuing of a citation and fines as specified in Section 13.04 of the Morgan Hill Municipal Code.

23. Connections requiring shut down of the system shall be done between the hours of 12:00 Midnight and 6:00 AM, and only upon coordination with the Department of Public Works.
24. All water lines shall be tested after completion of the trench backfill and compaction of the final base material, but prior to placement of the final roadway surface.
25. Contractor shall place marker posts adjacent to all air relief valves and blow off assemblies along water mains located in unimproved areas or fields. The posts shall be pressure treated redwood 4"x4"x6', painted white, buried 2'-6", and inscribed with "W/A.V." (for air relief valves) or "B.O." (for blow off assemblies), in 3 inch high carved letters painted blue.
26. The concrete contractor shall stamp a letter "W" on the face of curb directly above the water service.

27. **Backfill & Compaction:**

Backfill material shall be hand placed and compacted up to at least 6" above the pipe. When using native soil as trench backfill, the minimum sand cover shall be 12".

28. Jetting and/or flooding of trench backfill material will be permitted only if approved by the Soils Engineer and City Engineer. (for public areas only)29. Any excess excavation material may be deposited onsite in areas and at depths designated by the Owner, and with approval of the City Engineer.

30. The minimum relative compaction for trench backfill, subgrade and base material shall be 95% throughout the project unless recommended otherwise in the Soils Report and approved by the City Engineer.

31. If trench backfill material is 100% sand, the City shall conduct compaction tests of the lifts specified. If the trench backfill material is native soil, contractor shall provide compaction test results of the lifts specified in the Soils Report to the City Engineer from a certified testing laboratory at contractor's expense.

32. Any aggregate base that becomes contaminated during construction shall be removed and replaced with uncontaminated base.

33. **Erosion and Sediment Control:**

An erosion and sediment control plan shall be required prior to any physical development of a property. Erosion control shall be planned between September 1st and May 1st, and sediment control shall be planned year-round for the life of the project. Said plans shall meet the minimum standards and specifications of the California Stormwater Quality Association (CASQA) for Stormwater Best Management Practices (BMPs). Contractor shall be responsible for initiating the required control measures. CASQA BMP information can be viewed and downloaded at https://www.casqa.org/resources/bmp-handbooks.

34. **Curb Inlet Stenciling or Medallion:**

Next to all curb inlets, shall have a Thermoplastic stenciling or Medallion "No Dumping, Drains to Creek".

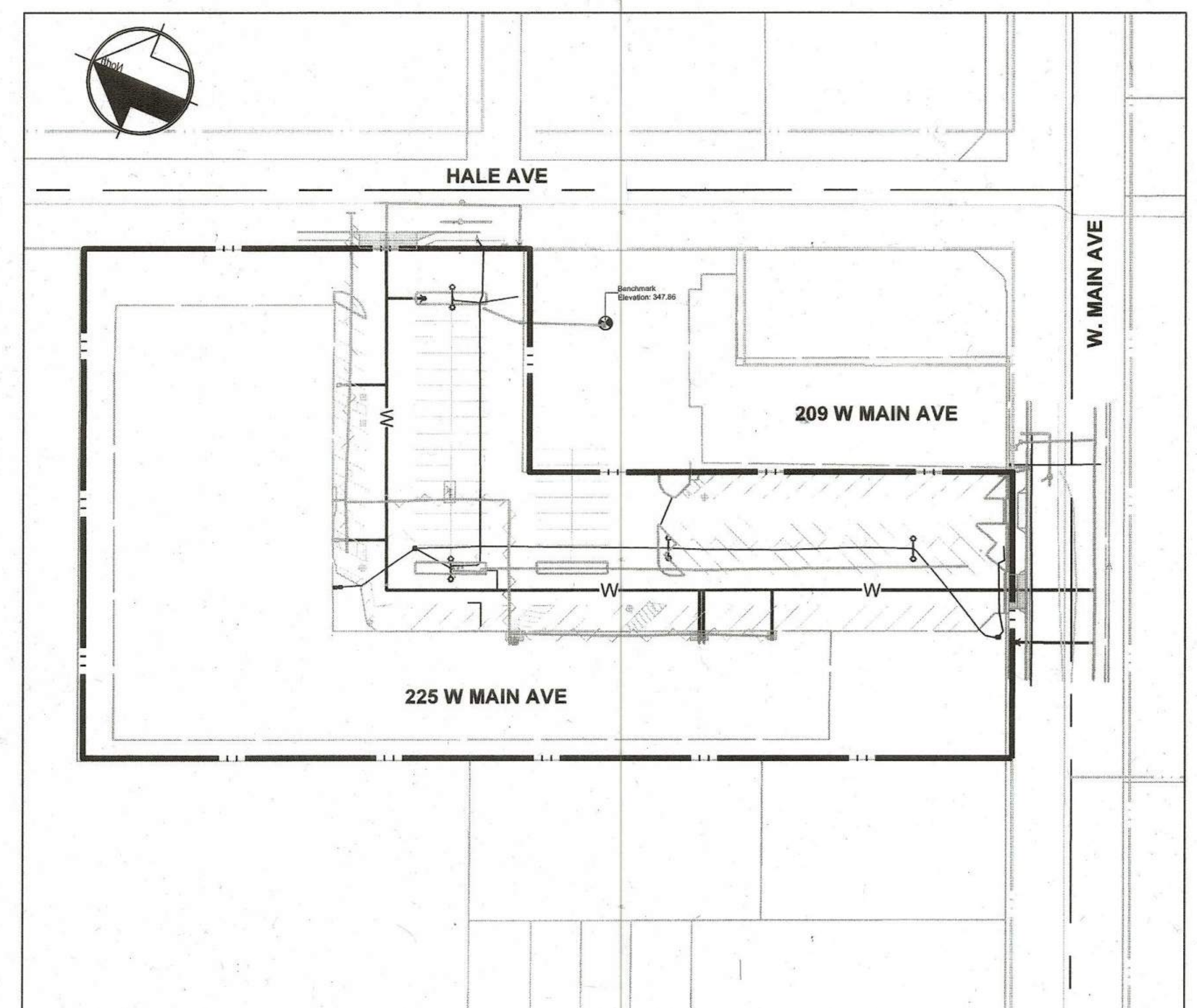
35. **Electroliers:**

All electroliers shall be installed by the Developer (at the locations shown on these plans). See Electrical Section of the Standard Details.

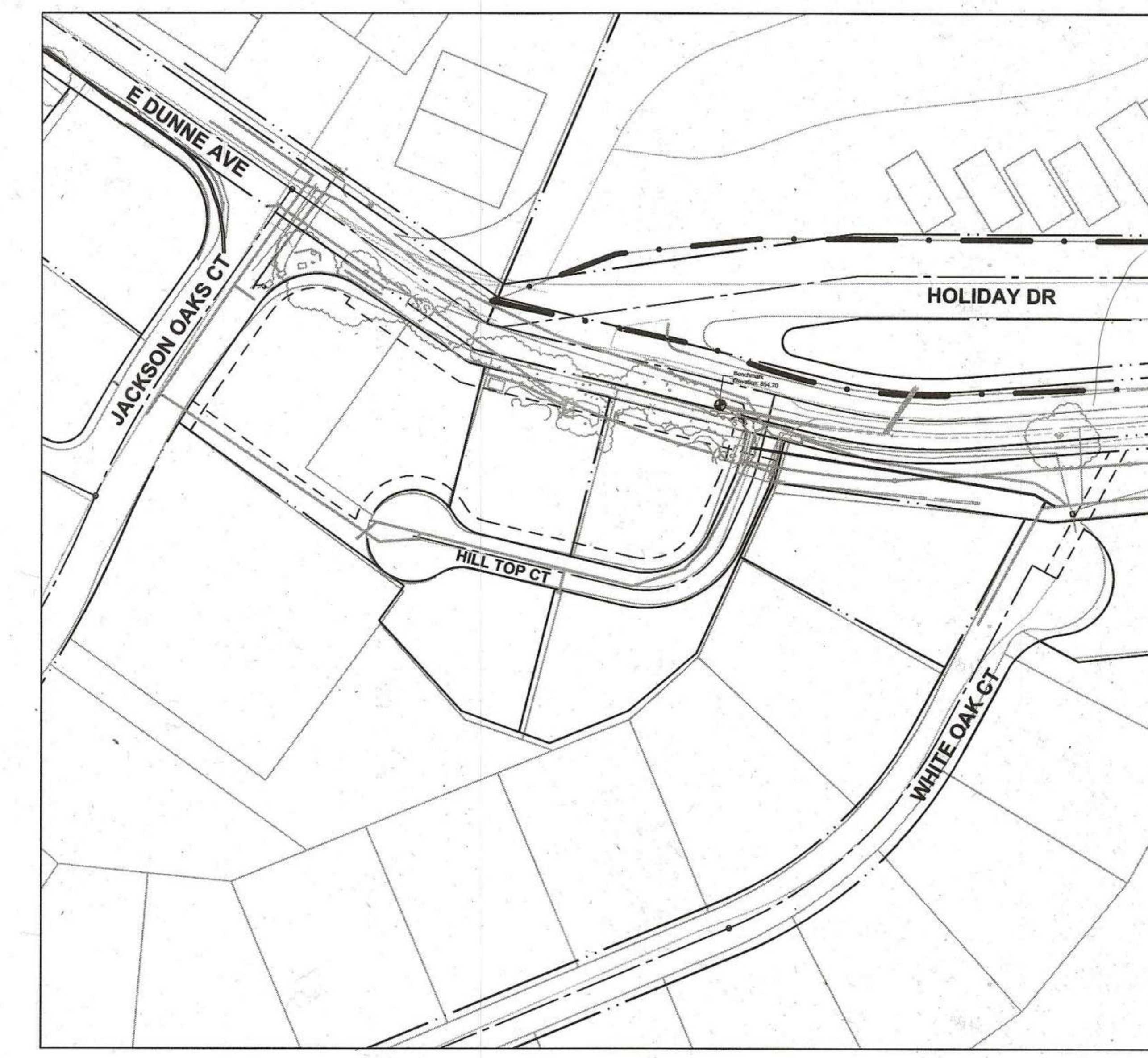
30 LED @ Residential
50 LED @ Collector
80 LED @ Arterial

36. **Monumentation**:

A. Developer/Contractor shall install all monuments, monument wells and corner pipes as noted on final or Parcel map.
B. Prior to occupancy of the final unit, developer/contractor shall obtain the services of the surveyor of record to verify that all monumentation is in place.
C. Existing or new monuments that are destroyed shall be reconstructed and set at developer/contractor's cost. Surveyor shall file necessary corner record with county and provide a copy of the filing at the Building and Engineering Division of land development.
D. A letter of compliance of items A, B & C shall be provided to the Building and Engineering Division of Land Development prior to acceptance of the public improvements.



PROJECT LOCATION #1
West Main Avenue



PROJECT LOCATION #2
Hill Top Court

Legend

Proposed	Description	Existing
	Project Property Boundary	
	Property Line	
	Centerline	
	Easement, as noted	
	Curb and Gutter	
	Driveway Approach	
SD	Storm Drain	(sd)
SS	Sanitary Sewer	(ss)
W	Water Main	(w)
IRR	Irrigation Line	(irr)
E	Underground Electric	(e)
	Chainlink Fence	
100	Major Contour	(100)
99	Minor Contour	(99)
	Benchmark	
	Monument, Type as shown	
2	Revision	
#/A	Section	
2.2%	Slope	(2.1%)
SD	Storm Drain Manhole	(sd)
	Curb Inlet	
	Drop Inlet	
SS	Sanitary Sewer Manhole	(ss)
	Fire Hydrant	(fh)
	Gate Valve	
	Utility Pole	
	Electrolier	
	Water Service	

*** existing features are labeled in italics and parentesis, typical*

Abbreviations

AB	Aggregate Base	EG	Existing Ground	PSE	Public Service Easement
ABS	Acrylonitrile Butadiene Stryrene	Elect., Elct.	Electrolier	PUE	Public Utility Easement
AC	Asphalt Concrete	EP	Edge of Pavement	PVC	Polyvinyl Chloride
ADA	Americans with Disabilities Act	EQ.	Equivalent	PVI	Point of Vertical Intersection
Approx.	Approximate	ER	End of Return	(R), Rad.	Radial
ASBC	Asbestos Cement	EVC	End of Vertical Curve	RCP	Reinforced Concrete Pipe
BC	Beginning of Curve	FF	Finish Floor	RPP	Reinforced Plastic Pipe
BFE	Base Flood Elevation	FG	Finish Grade	RSC	Rapid Strength Concrete
BM	Benchmark	FH	Fire Hydrant	RW, R/W	Right-of-Way
BMP	Best Management Practice	FL	Flowline	S/L	Street Light
BoW	Bottom of Wall	FT.	Foot	SCM	Source Control Measure
BSM	Bioswale Media	GB	Grade Break	SD	Storm Drain
BVC	Beginning of Vertical Curve	GT	Grease Trap	SDCO	Storm Drain Cleanout
BW	Back of Walk	HDPE	High Density Polethlene	SDMH	Storm Drain Manhole
CASQA	California Stormwater Quality Association	Hor., Horiz.	Horizontal	SS	Sanitary Sewer
CBC	California Building Code	HP	High Point	SSCO	Sanitary Sewer Cleanout
CCTV	Closed Circuit Televised Video	ID	Inside Diameter	SSMH	Sanitary Sewer Manhole
CI	Curb Inlet	INV	Invert	STA	Station
CIP	Cast Iron Pipe	JP	Joint Pole	Std.	Standard
CIPP	Cured-In-Place Pipe	JT	Joint Trench	SW	Sidewalk
CL, C/L,	Centerline	LB	Pound	SWCP	Stormwater Control Plan
Cl.	Class	LF	Linear Feet	TBM	Temporary Benchmark
CLR	Clear	LP	Low Point	TC	Top of Curb
CMP	Corrugated Metal Pipe	Max	Maximum	TCP	Traffic Control Plan
CO, C/O	Clean Out	Min	Minimum	ToB	Top of Bank
Conc.	Concrete	MOFG	Maximum Outside Finish Grade	ToW	Top of Wall
D/S	Downstream	(N)	New	Typ.	Typical
DDCVA	Double Detector Check Valve Assembly	NG	Natural Ground	U/S	Upstream
Det., DTL	Detail	#, No.	Number	VCP	Vitrified Clay Pipe
DI	Drop Inlet	NPDES	National Pollutant Discharge Elimination System	Vert.	Vertical
Dia.	Diameter	NTS	Not to Scale	W	Water
DIP	Ductile Iron Pipe	OC	On Center	W/	With
DWG	Drawing	OD	Outer Diameter	WDID	Waste Discharge Identification Number
DWY, D/W	Driveway	PB	Pull Box	WM, W/M	Water Meter
(e), ex., exst	existing	PCC	Portland Cement Concrete	WV	Water Valve
EA.	Each	PL, P/L,	Property Line		
EC	End of Curve	PSDE	Private Storm Drain Easement		

Vicinity Map

Underground Service Alert Note

Observed surface evidence of utility lines including facilities, appurtenances, and markings were used in depicting the locations of the underground features shown on these plans. Underground features depicted are approximate and it is the responsibility of the contractor to determine the actual location and depth of underground utilities prior to starting excavation.
Call USA North: 1.800.227.2600 OR 811

Note:

Contractor agrees that they shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working outs; and that the contractor shall defend, indemnify, and hold the City of Morgan Hill harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting for liability arising from sole negligence of the City of Morgan Hill.

Sheet List Table

Sheet Number	Sheet Title
1	Cover Sheet
2	General Notes
3	W Main Ave Existing Topography
4	W Main Ave Proposed Utility Plan
5	Hill Top Existing Topography
6	Hill Top Proposed Utility Plan
7	City Standard Details
8	City Standard Details

Cover Sheet
2025 Morgan Hill Water Main Replacment Project

DRAWN	AEV	DESIGN	KW	HOR	N/A
CHECKED	KW	DATE		VERT	N/A
APPROVED	[signature]	DATE	4/9/25	DATE	3/13/2025
Scott C. Creer RCE 59879		CITY ENGINEER EXP. DATE 06-30-2025		JOB NUMBER	WA6005

City of Morgan Hill
Engineering & Utilities
17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236
CITY OF MORGAN HILL

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY FILE NO. WA6005
PLAN SET 3/13/2025
Sheet

Project Notes:

Standard General Notes:

1. The Contractor agrees that, in accordance with generally accepted construction practices, the Contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of this project, including the safety of all persons and property. This requirement shall apply continuously and note be limited to normal working hours. The contractor further agrees to defend, indemnify and hold the City of Morgan Hill harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of the City of Morgan Hill.
2. The Contractor shall maintain a copy of the project plans on the jobsite at all times.
3. All work shall conform to the Project Plans and the City of Morgan Hill Design and Construction Standards and other specifications referenced therein.
4. Contractor shall conduct work in accordance with CalTrans Standard Specifications and City Specifications.
5. No change to the project improvement plans shall be permitted without prior approval by the City and Design Engineer.
6. The Contractor shall visit site(s) prior to submitting bid(s).
7. The Contractor shall provide residents and businesses of any utility shut downs in accordance with specifications.
8. The Contractor shall notify the City of Morgan Hill at least 48 hours in advance of the start of construction activity. All utility shut downs are to be coordinated through the City Engineering & Utilities Department. Any temporary subsequent resumption of work requires the notification of the City and the Engineer.
9. The Contractor shall exercise due care and concern to avoid injury to existing facilities, utilities, and property. Contractor to replace or restore to initial conditions any facilities, improvements, utilities, or other property damage or disturbed area as a result of construction.
10. The Contractor shall replace, at their expense, all trees, shrubs, lawns, fences, irrigation systems, and improvements which are to remain intact but have been removed or damaged during construction. Contractor shall not remove or damage improvements located within City property without written permission by the City; nor private property without written permission by the property owner.
11. The Contractor shall secure a no-fee encroachment permit from the City of Morgan Hill, Engineering and Utilities Department prior to commencement of work.
12. Excavation shall be adequately shored, braced, and sheeted so that the earth will not slide or settle and so that all existing improvements of any kind will be fully protected from damage. Any damage resulting from lack of adequate shoring, bracing, and sheeting, shall be the responsibility of the Contractor, and they shall effect necessary repairs or reconstruction at their own expense. Where the excavation for a conduit, trench, and/or structure is five feet or more in depth, the Contractor shall provide adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life, or limb, which shall conform to the applicable construction safety orders of the Division of Industrial Safety of the State of California. The Contractor shall always comply with OSHA Requirements.
13. The Contractor shall bear sole responsibility for the design and implementation of shoring.
14. The Contractor shall take effective action to prevent the formation of any airborne dust nuisance and shall be responsible for any damage resulting from their failure to do so.
15. The Contractor shall provide for ingress and egress for private property adjacent to the work throughout the period of construction.
16. Overnight parking of construction equipment in the public right-of-way shall not be permitted, except in location(s) approved by the City.
17. Contractor is responsible for site safety. All excavations shall be plated with non-skid plates when inactive. Barricades with lights shall be installed delineate construction zone.
18. The Contractor shall provide all lights, signs, barricades, flagmen, or other devices necessary to provide for safety.
19. The Contractor shall post emergency telephone numbers for Police, Fire, Ambulance, and those agencies responsible for maintenance of utilities in the vicinity of the job site.
20. Any extra construction staking necessitated solely by the Contractor's negligence will be charged to the Contractor on a time and material basis.
21. Station hereon is along the street centerline unless otherwise shown or indicated.
22. All return radii and curb data are measured to the face of curb.
23. All quantities and pay items are and will be based on horizontal measurements.
24. All surplus and unsuitable material shall be removed from the public right-of-way.
25. Lengths of utility piping are horizontal distances from center to center of structures, rounded off to the nearest foot.
26. Prior to obtaining water from hydrants for construction purposes, Contractor must apply for and obtain a temporary hydrant meter from the City of Morgan Hill Utility Billing Division and comply with the requirements.
27. Existing underground utilities and improvements are shown in their approximate location based upon record information available at the time of the preparation of these plans. Locations may note have been verified in the field and no guarantee is made as to the accuracy or completeness of the information shown. Call Underground Service Alert (USA) at 1-800-642-2444.
28. It shall be the responsibility of the Contractor to determine the existence and location of Utilities shown on these plans, indicated in the field by locating services, or evidenced by facilities visible at, or adjacent to, the job site. Any additional cost incurred as a result of the Contractor's failure to verify locations of exiting utilities prior to beginning construction shall be borne by the Contractor and is deemed included and merged in the contract unit price.
29. It shall be the responsibility of the Contractor to notify all public and private utility owners 48 hours prior to commencement of work adjacent to the utility. Contact Underground Service Alert (USA) at 1-800-642-2444.
30. Contractor shall notify, by circular, all business establishments and residences located in the area affected by the work one week prior to the start of construction. At a minimum, all residents and business establishments within 100 feet of the work area shall be notified. A draft of the circular shall be submitted to the City for review and approval.
31. All existing utilities and improvements that become damaged during construction shall be completely restored to the satisfaction of the City Engineer at the Contractor's sole expense.
32. Any relocation of public utilities shall be conducted in accordance with any and all requirements of the utility company, including fees, bonds, permits, working conditions, etc. This work shall be done at no expense to the utility company.
33. If archaeological resources are discovered during construction, work shall be halted within 50 meters (165 feet) of the find until a qualified professional archaeologist can evaluate it. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented. If any human remains are found during the construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner of Santa Clara County is contacted to determine that no investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the Native American Heritage Commission within 25 hours. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent (MLD) from the deceased Native American. The MLD may then make recommendations to the landowner, or the person responsible for excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods as provided in Public Resources Code Section 5097.98. The landowner, or their authorized representative, shall rebury the Native American remains and associated grave goods with appropriate dignity on the property in a location not subject to further disturbance if: a) the Native American Heritage Commission is unable to identify a MLD or the MLD failed to make a recommendation within 24 hours after being notified by the commission; b) the descendent identified fails to make a recommendation; c) the landowner, or their authorized representative, rejects the recommendation of the descendent, and the mediation by the Native American Heritage Commission fails to provide measure acceptable to the landowner.
34. The City of Morgan Hill does not specify or recommend the use or installation of any material or equipment which is made from, or which contains, asbestos or lead for use in the construction of these improvements. Any party installing or using such materials or equipment shall be solely responsible for all injuries, damages, or liabilities of any kind caused by the use of such materials or equipment. The provisions of this note shall not apply unless they are expressly waived in writing by the City of Morgan Hill.
35. The Contractor shall meet and follow all NPDES requirements in effect at the time of construction.
36. The Contractor shall be responsible for protect all street monuments, lot corner pipes, and grade stakes. Should any be disturbed during the process of construction, it shall be the Contractor's responsibility to replace all disturbed street monuments, lot corner pipes, or grades stakes disturbed at the direction of the City.
37. The Contractor shall neither waste nor deposit any hazardous materials on the grading surfaces or within the graded cut and fill areas of this project, including, but not limited to, gasoline or diesel fuels, motor oils or transmission fluids, antifreeze, hydraulic fluids, lubricants, starting fluids and filters, and/or containers for these products. Hazardous material spills that occur as a result of either equipment failures or vandalism, including all adjacent contaminated soils, shall be removed and transported to an environmentally approved disposal site. All removal, transportation and disposal costs shall be the responsibility of the Contractor or their subcontractor.
38. The Contractor shall install a concrete saddle in locations which the vertical separation between the sanitary sewer and any other utility is less than 12 inches.
39. Should it appear that the work to be done or any matter relative thereto is not sufficiently detailed or explained on these plans, the Contractor shall contact the City of Morgan Hill at (408) 776-7337 for such further explanations as may be necessary.

Construction Notes:

1. Paving

1.1. A prime coat of liquid asphalt, conforming to Section 39 of the Standard Specifications, shall be applied to all areas receiving asphalt concrete at the rate of 0.25 gallons per square yard.
1.2. Asphalt Concrete (AC) shall consist of a mixture of sand, mineral aggregate, and liquid asphalt conforming to Standard Specifications Type "A", 1/2" maximum, medium grading. Paving asphalt shall have PG 64-10. Asphalt concrete shall be a minimum of 4" in thickness and placed in lifts 2" in maximum thickness.
1.3. Tack coat of asphalt emulsion, conforming to the Standard Specifications shall be applied to existing asphalt concrete surfaces and vertical concrete surfaces to receive new asphalt concrete, and to any lift in advance of spreading the next lift.
1.4. Seal coat shall be diluted with equal amounts of water and applied at a rate of 0.10 gallons per square yard to the surface of all new asphalt concrete pavement, which shall be free of dust and loose material prior to application. Seal coat shall be applied within 7 days of placement of top lift of asphalt.
1.6. Materials and installation of Portland cement concrete curb, gutter, and sidewalk shall conform to Section 90, "Portland Cement Concrete", of the Standard Specifications and City Standard Details.
1.7. All valve boxes and manholes to be set flush with finish grade unless otherwise noted.
1.8. Aggregate base shall be Class 2 and shall be spread and compacted to conform with Section 26 of the Standard Specifications.
1.9. The use of Recycled Asphalt Product (RAP) shall NOT be permitted in the final lift of asphalt concrete pavement.

2. Water

4.1. Valves shall be furnished and installed in accordance with City Standard Detail W-12.
4.2. Thrust restraints shall be constructed at all horizontal and vertical fittings and shall conform to Standard Details W-17, W-18, and W-19.
4.3. As an alternative to utilizing thrust blocks at most locations, the Contractor may propose thrust retrained joint construction (EBAA "Megalug", or equal). The Contractor shall submit their request together with material and manufacturer information to the City Engineer and obtain written approval prior to ordering pipe.
4.4. All water meters shall be obtained from the City of Morgan Hill and shall be installed in locations shown here.
4.5. All water mains shall have 3 feet minimum cover from the top of pipe to the finish grade unless otherwise noted on the plans.
4.6. Al water mains shall be ductile iron pipe (DIP) Class 50. All water laterals shall be 1" Type K copper pipe. All water valves shall be "Mueller A-2360-16" gate valves with non-rising stem and double "O" ring seal, or approved equal.
4.7. Trenches shall be constructed per the specifications of the City of Morgan Hill. Initial backfill shall be compacted with lightweight mechanical tampers or vibrating plate compactors. Heavy equipment shall not be used to compact backfill immediately above the pipe.
4.8. Deflection in water mains shall not exceed half of the manufacturer's recommendations.
4.9. Fire hydrants shall be installed as detailed in City Standard Details W-13, W-14, W-15, and W-16
4.10. Pipe bedding and backfill for the new water mains shall be in accordance with City Standard Details.

3. Materials

6.1. The Contractor shall submit a Traffic Control Plan (TCP) to the Engineering & Utilities Department for approval a minimum of five (5) days prior to any work within an existing public street, pedestrian path, or bicycle path. The plan shall be signed by a licensed Traffic Engineer when it involves an arterial street. Contractor shall provide all necessary traffic control in accordance with the latest edition of the California Manual on Uniform Traffic Control Devices (CAMUTCD) while working within the public right-of-way. One traffic lane (10 feet minimum) shall be open to vehicular traffic during all hours, weekends, and holidays. Street closures and detours shall only take place upon City Engineer approval and Police Department coordination.
6.2. All traffic control devices shall be fabricated and installed in accordance with Part 6 and Part 9 of the CAMUTCD.
6.3. All cones used for lane closure after nightfall shall be fitted with retroflective bands (or sleeves). All advanced warning sign installations shall be equipped with flags for daytime closure and flashing beacons shall be used during nighttime closures.
6.4. Any permanent sigh or existing pavement markings that conflict with the TCP shall be covered, obliterated, or removed as directed by the Engineer.
6.5. During all construction periods, the Contractor shall have at the jobsite all necessary traffic control devices (appropriate sign, lighted arrow display, channelizing devices, etc.).
6.6. Construction shall be sequenced to provide the least possible adverse affect to residences.
6.7. Construction materials shall be kept off driveways or private property and consolidated in areas within the City right-of-way and easements during working hours unless otherwise approved by the Engineer.
6.8. All construction signs shown on the TCP shall be black on orange.
6.9. During non-construction hours, all construction sign except W20-1 and G20-2 signs are to be covered. All delineators are to be removed and all open trenches shall be covered with steel plates. All steel plates shall have a manufactured surface with a coefficient of friction that equals or exceeds 0.35 and shall be recessed.
6.10. All disturbed pavement markers shall be replaced by the contractor. All disturbed markings and stencils shall be replaced in full. All striping, markings, and stencils shall be thermoplastic. Pavement striping and markings shall adhere to the CalTrans Standard Specifications Sections 84 and 85. No separate payment will be made for this work. Include cost of replacing pavement striping, marking, and stencils in facilities requiring this work.

4. Potholing

7.1. The Contractor shall pothole all utilities that may conflict with the proposed improvements as first order of work and prior to excavating as described below. Potholing data shall be submitted to the City a minimum of one week prior to the start of the scheduled excavation at each location.
- 7.1.1. Open Trench excavation locations:
  - 7.1.1.1. The Contractor shall pothole all utilities that may conflict with the proposed work prior to excavating. At a minimum, this includes an underground gas, water, electrical, and fiber optic cable crossings.
- 7.1.2. Pipe Lining Locations:
  - 7.1.2.1. The contractor shall locate all utility crossings in location where excavations are required prior to lining the pipe.
- 7.1.3. Pipe Bursting Locations:
  - 7.1.3.1. The Contractor shall pothole all utilities that may conflict with the pipe bursting work prior to excavating. All utilities within three (3) feet of the work shall be potholed and exposed during bursting operations. At a minimum, this includes any underground gas, electrical, and fiber optic cable.
  - 7.1.3.2. The Contractor shall pothole and expose the water main where it is within five (5) feet of the sewer main. Refer to water separation notes for additional information.

5. Work Within Easements and Private Properties

9.1. Site Access is extremely limited in locations where work is occurring in side yards, backyards, and outside the street right-of-way. Access is generally limited to foot traffic and hand-held equipment at these locations. Contractor shall visit all sites and observe existing conditions from the street right-of-way during bidding to review project locations and access restrictions. Contractor shall consider access issues and limitations when bidding. No additional compensation will be made for difficult and limited site access issues.
- 9.1.1. The City will provide the Contractor with a list of all properties where right of entry agreements have been obtained.
- 9.1.2. If the contractor identifies additional private properties where access is needed and right of entry agreements have not been obtained, the Contractor shall notify the City 30 days prior to the start of scheduled work within the private property.

6. Overhead Electric Utilities

10.1. Low-hanging high-voltage power transmission utilities are present at the project location.
10.2. Contractor shall consider the proximity of overhead electric utilities when bidding, and no additional compensation shall be made for additional work necessitated by the presence of overhead electric utilities (smaller equipment, etc.).
10.3. The Contractor shall insure a minimum clearance between the power lines and the work at all times as dictated by OSHA and PG&E regulations.

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

WORK ACCEPTED:	INSPECTOR:
BY:	DATE:

DRAWN: AEV	DESIGN: KW	HOR. N/A
CHECKED: KW	DATE:	VERT. N/A
APPROVED: [signature]	DATE: 4/9/25	JOB NO. WA6005
Scott C. Creer RCE 58879	CITY ENGINEER EXP. DATE 06-30-2025	

City of Morgan Hill
Engineering & Utilities
17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

General Notes
Morgan Hill Water Main Replacment Project
MORGAN HILL CALIFORNIA

FILE NO. WA6005
PLAN SET: 3/13/2025

SCALE: 1"=20'
0 10 20 30 40

33'
33'

(S34°52'00"E)
(286.36)

(ex. ssmh)
(w)
(e 8" wv)
(e 8" Water Main Stub)
(ex. ssmh)
(tc 349.05)
(tc 348.53)
(tc 348.39)
(tc 348.88)
(ex. fire hydrant)
(250.12')
(tc 349.05)
(tc 348.97)
(e utility pole)
(125.56')
(ex. 8" w)
(tc 350.63)
(tc 349.41)
(ex. electrolier)
(tc 348.62)
(tc 349.45)
(tc 348.52)
ex di
Rim 347.77
ex di
Rim 347.86
(tc 350.33)
(ex. 12" sd)
(349)
3/4" water meter
(350)
(349)
(ex. underground electrical)
(N55°08'00"E)
(S34°52'00"E)
(tc 350.16)
(270.13')
(ex. ssmh)
(tc 349.97)
(ex. fire hydrant)
(349)
(ex. 8" w)
(tc 349.10)
(160.80')
(tc 350.24)
(tc 349.95)
(350)
(350)
(tc 349.98)
(tc 350.21)
(ex. electrolier)
(ex. electrolier)
(tc 349.41)
(ex. underground electrical)
(tc 350.13)
(ex. 8" w)
ex. 1½" water meter
ex. electrolier
ex. backflow preventer
(tc 350.03)
(tc 349.99)
(tc 350.09)
(tc 350.14)
(tc 350.17)
(ex. irrigation)
(ex. irrigation)
(tc 350.30)
ex. irrigation meter
(tc 350.22)
(tc 350.00)
(tc 350.00)
(tc 350.11)
(tc 350.48)
(ex. 8" w)
(350)
(tc 349.59)
W Main Ave
(350)
(tc 349.97)
(350)
ex sdmh
Rim 350.18
(4) ex. 1" water meter
(ex. 2" w)
(ex. 1" w)
(2) ex. 1" water meter
(tc 350.37)
(tc 350.35)
33'
33'
(N55°08'00"E)
(S55°08'00"W)
(N34°52'00"W)
(520.25)

(Basis of Bearings N34°52'00"W)

Hale Ave

207 W Main Ave
APN 764-17-003

(ex. structure)

221 W Main Ave
APN 764-17-003

(ex. structure)

W Main Ave Existing Topography

2025 Morgan Hill Water Main Replacment Project

Project Information:

APN	764-17-003
Present Use:	COMMERCIAL
Proposed Use:	COMMERCIAL
Present Zoning:	COMMERCIAL
Proposed Zoning:	COMMERCIAL
Sanitary Sewer:	CITY OF MORGAN HILL
Gas and Electric:	PG&E
Water:	CITY OF MORGAN HILL
Telephone:	FRONTIER/VERIZON
Existing Improvements:	As Shown
Area:	2.639 ACRES
Topo:	Field Topo

Basis of Bearings: THE BEARINGS SHOWN UPON THIS MAP ARE BASED UPON THE CENTERLINE OF HALE AVENUE AS FOUND AND MONUMENTED AS NORTH 34° 52' WEST AS SHOWN ON THAT RECORD OF SURVEY RECORDED AT BOOK 113 OR MAPS AT PAGE 54, SANTA CLARA COUNTY RECORDS.

Benchmark: BENCHMARK IS LOCATED AT THE NORTH EAST CORNER OF DRAIN INLET, AS SHOWN ON THESE PLANS.
Elevation= 347.86

Flood Zone: THIS PROPERTY LIES PARTIALLY IN FLOOD ZONE AE, BASE FLOOR ELEVATIONS DETERMINED PER FEMA FIR, 06085C0443H, EFFECTIVE MAY 18, 2009.

Boundary Note: Property lines shown on this plan are based on record data and boundary monumentation measured to date per 113M54

NO.	DESCRIPTION	DATE	BY

REVISIONS

WORK ACCEPTED: INSPECTOR:
BY: DATE:

DRAWN: AEV	DESIGN: KW	HOR. 1" = 20'
CHECKED: KW	DATE:	VERT. N/A
APPROVED:	DATE: 4/9/25	JOB NO. WA6005

Scott C. Creer
RCE 58879
CITY ENGINEER
EXP. DATE 05-30-2025

CITY OF MORGAN HILL

City of Morgan Hill
Engineering & Utilities
17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

W Main Ave Existing Conditions
2025 Morgan Hill Water Main Replacment Project
MORGAN HILL CALIFORNIA

FILE NO. WA6005
PLAN SET: 3/13/2025
DRAWING: 3 OF 8

N:\PROJECTS\CIP\WA\WA6005 - Morgan Hill Water Main Replacement Project\CAD\SP-02 existing topo.dwg - 4/8/2025 11:04 AM - Printed 4/8/2025 11:07 AM by Agustin Victoria
Xrefs: SP-00.dwg

Construction Notes

(5) Reconnect existing water service laterals.

NO.	DESCRIPTION	DATE	BY

REVISIONS

WORK ACCEPTED: BY: DATE:
INSPECTOR:

DRAWN: AEV	DESIGN: KW	HOR. 1" = 20'	
CHECKED: KW	DATE:	VERT. 1"=2'	
APPROVED:	DATE: 4/9/25	JOB NO. WA6005	

Scott C. Creer RCE 58679 — CITY ENGINEER EXP. DATE 06-30-2025

CITY OF MORGAN HILL

City of Morgan Hill
Engineering & Utilities
17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

W Main Ave Plan Profile
2025 Morgan Hill Water Main Replacment Project

MORGAN HILL — CALIFORNIA

FILE NO. WA6005
PLAN SET: 3/13/2025
DRAWING: 4 OF 8

W Main Ave Proposed Utility Plan

2025 Morgan Hill Water Main Replacment Project

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

WORK ACCEPTED: INSPECTOR: BY: DATE:

DRAWN: AEV	DESIGN: KW	HOR. 1" = 20'
CHECKED: KW	DATE:	VERT.
APPROVED: [signature]	DATE: 4/9/25	JOB NO. WA6005

Scott C. Creer RCE 58879 CITY ENGINEER EXP. DATE 06-30-2025

City of Morgan Hill
Engineering & Utilities
17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

CITY OF MORGAN HILL

Hill Top Existing Conditions
2025 Morgan Hill Water Main Replacment Project

MORGAN HILL CALIFORNIA

FILE NO. WA6005
PLAN SET: 3/13/2025
DRAWING: 5 OF 8

NO.	DESCRIPTION	DATE	BY

REVISIONS

WORK ACCEPTED: INSPECTOR:
BY: DATE:

DRAWN: AEV | DESIGN: KW | HOR.
CHECKED: KW | DATE: | VERT.
APPROVED: | DATE: 4/3/25 | JOB NO. WA6005
Scott C. Creer RCE 58679 — CITY ENGINEER EXP. DATE 06-30-2025

CITY OF MORGAN HILL

City of Morgan Hill
Engineering & Utilities
17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

Hill Top Plan Profile
2025 Morgan Hill Water Main Replacment Project
MORGAN HILL CALIFORNIA

FILE NO. WA6005
PLAN SET: 3/13/2025
DRAWING: 6 OF 8

Hill Top Proposed Utility Plan
2025 Morgan Hill Water Main Replacment Project

GENERAL SECTION

CONSTRUCTION WITHIN CITY RIGHT-OF-WAY

No person or contractor shall do or cause to be done any improvement or encroachment work of any kind in any public right-of-way within the City without first having obtained an encroachment permit from the Public Works Department.

Developers shall arrange for a pre-construction meeting with the City Engineer (Municipal Code 17.32.250b) prior to commencing any construction. An encroachment permit shall be obtained from the Public Works Department upon completion of said meeting and prior to constuction of any improvements within an existing or offered for dedication right-of-way, public utility easement or public service easement.

Contractor shall notify the Public Works Department 48 hours prior to commencement of any work phase. At that time an "Inspection Request Form" shall be completed to ensure proper scheduling of an inspection with the City Engineer's Representative.

Contractor shall not destroy existing permanent survey monuments; whether property corners or street centerline monuments.

All work shall conform to the latest edition of the City of Morgan Hill Standard Details for Construction. Deviations from the Standard Details must be approved by the City Engineer.

Contractor shall only use equipment provided with a spark arrestor device to reduce a potential fire hazard.

ON-SITE CONSTRUCTION

A grading permit shall be obtained from the City of Morgan Hill Building Division prior to any grading of building pads. Applicant for the grading permit shall provide a plan review letter from the Soils Engineer. A grading permit does not give contractor permission to commence off-site (street) grading. Only upon City approval of the improvement plans and completion of a pre-construction meeting, shall contractor commence off-site grading.

Contractor shall preserve all surrounding property by confining operations to within the "Limits of Work". Contractor shall be responsible for maintaining access for all adjoining residents, places of business, and properties at all times and in a safe manner. Contractor shall make proper notification at least 24 hours in advance of any interruption in access or service to the above property owners as well as to the City Engineer's Representative.

RIGHT OF MODIFICATION

Approval of an improvement plan does not release owner/subdivider of the responsibility for correction of mistakes, errors, or omissions, contained within the plans. If during the course of construction, public interest requires a modification of or a departure from the improvement plans or these Standard Details for Construction, the City Engineer shall have the authority to require such modifications and departures and to specify the manner in which the same is to be made.

City of Morgan Hill – Public Works Department | GENERAL NOTES | DRAWING NO. G-I
CITY ENGINEER – DATE 4/1/96 – REVISED

OFF-SITE WATER AND DUST CONTROL

Contractor shall provide a water truck onsite at all times. Contractor will be allowed to draw water from the City of Morgan Hill Water Distribution System only after obtaining a hydrant meter from the Public Works Department and an inspection of the water truck for a proper backflow device or "air-gap" filling pipe. Developer has paid for "off-site" construction water which shall not be used for building construction. Contractor shall keep down dust from construction activity to the maximum extent possible. Contractor shall clean all existing streets, curbs, gutters, and sidewalks affected by the project at the end of each working day.

MATERIAL STORAGE

No material shall be stored near the edge of pavement, traveled way, sidewalk, driveway, or shoulder line which may create a hazard for vehicular and pedestrian traffic.

TRAFFIC CONTROL

Contractor shall submit a traffic control plan for approval to the Public Works Department a minimum of 5 days prior to any work within an existing public street. The plan shall be signed by a licensed Traffic Engineer when it involves an arterial street. Contractor shall provide all necessary traffic control in accordance with the latest edition of CALTRANS "Manual of Warning Signs, Lights, and Devices for Use in Performance of Work Upon Highways" while working within the public right-of-way. Two traffic lanes (10' min.), shall be open to vehicular traffic during all hours, weekends, and holidays. One lane one way traffic, may be permitted under the control of not less than 2 (two) competent flagmen during construction operations. Street closures and detours shall only take place upon City Engineer approval and Police Department coordination.

City of Morgan Hill – Public Works Department | GENERAL NOTES | DRAWING NO. G-II
CITY ENGINEER – DATE 4/1/96 – REVISED

WATER SECTION

GENERAL

All work shall be done in accordance with the latest editions of the American Water Works Association Standards (AWWA), and the American Society for Testing and Materials (ASTM), except as modified herein.

All component(s) going into city water system should be lead free.

WATER LINES

All water lines shall be Ductile Iron (Min. Thickness Class 50) with Ductile Iron fittings and shall conform to AWWA/ANSI C151/A21.51 standards. ALL valves, valve boxes, and covers shall be as indicated in the City of Morgan Hill Standard Details. Use of C900 Piping shall only be used with the City Engineers approval.

A standard gate valve, with a brass blow-off shall be installed at the end of all dead-end lines. A 1" air relief valve must be installed at all high points in the line. Water tight plugs shall be placed at all open ends of pipes when the job site is unattended.

All water services shall be Type "K" copper tubing as shown on Detail W-1.

The concrete Contractor shall stamp a letter "W" on the face of curb directly above the water service.

All fire hydrants shall have companion valves and be of the type indicated on Detail W-8.

All water lines shall be blocked with concrete kick blocks at all changes in direction, all bends, crosses, wyes, tees, reducers, plugs, dead-ends and changes is size. Thrust block or kick block dimensions shall be based on the greater of either 150 PSI min. or 1.5 times the working pressure, while assuming a 2000 PSF soil bearing.

Note: Add A/C Pipe, shall be removed byDev./Contractor(Hazardous Waste with proper methods and State Standrds.

CLEANING AND TESTING

After installation, all pipe lines shall be flushed at 1.0 fps (main line velocity) with clean water. Lines shall be filled slowly and provisions shall be made for venting of the air. Only Department of Public Works Personnel shall open valves to the City's water system. Water lines shall be tested for tightness at the lower end of the line under a hydrostatic pressure of 150 PSI, or 50% above normal operating pressure, whichever is greater. The Contractor shall furnish all necessary equipment, labor and materials needed for the test. The test shall conform to AWWA C600 Section 4 and be conducted for at least 2 hours. See Detail W-IV for allowable leakage of ductile iron pipe.

All water lines shall be tested after completion of the trench backfill and compaction of the final base material, but prior to placement of the final roadway surface.

STERILIZATION

After pressure testing, and before putting into service, all water lines shall be chlorinated by the Contractor in accordance with AWWA C651 or as directed by the City Engineer. Chlorine is furnished by the Contractor and chlorination shall be supervised by a City Inspector.

Chlorination by placement of chlorine tablets in each section of pipe is allowed and shall be in accordance with AWWA C651 and held for a duration of 24 hours.

City of Morgan Hill – Public Works Department | GENERAL NOTES | DRAWING NO. W-I
CITY ENGINEER – DATE 4/1/96 – REVISED 3/06/23

MICROBIOLOGICAL TESTING

The Contractor shall provide the City with a laboratory report as to the purity of the water before acceptance by the City and placement of the new lines into service. The procedures for such tests shall be as follows:

1. The Contractor shall notify and receive approval for coliform bacteria testing from the Inspector a minimum of 48 hours prior to taking the test, and only after the water line has been hydrostatically tested, chlorinated, final flushed and passed by the Inspector.

2. All sampling and testing for the City of Morgan Hill Water System shall be performed by authorized staff from any laboratory chosen by the Contractor which is certified by the California State Department of Health Services to perform microbiological analysis of drinking water.

3. Authorized staff from the chosen certified laboratory shall take a chlorine residual test prior to taking the coliform test. Chlorine residual shall not exceed 0.3 parts per million, otherwise the coliform test shall not be taken. Flushing shall then continue until the maximum chlorine level is attained.

4. The Contractor shall submit to the Public Works Department the following items:

   A. Proof of State Department of Health Services certification for the laboratory chosen;

   B. A copy (Fax OK) of the chain-of-custody for the water sample;

   C. A copy (Fax OK) of the results of the test with an original "hard copy" to follow.

5. Upon review and approval of the items submitted in item 4., only Department of Public Works personnel shall open the necessary valves to connect the new lines to City's water system. Failure to follow the above requirement shall be considered an "unlawful connection" to the City Water System and may result in the issuing of a citation and fines as specified in Section 13.04 of the Morgan Hill Municipal Code.

6. Connections requiring shut down of the system shall be done between the hours of 12:00 Midnight and 6:00 AM, and only upon coordination with the Department of Public Works.

DUCTILE IRON

(a) Pipe. Ductile iron pipe shall conform to the requirements of AWWA C100 series. Class 50 pipe shall be the minimum allowable thickness class.

(b) Joints. All ductile iron pipe laid underground shall have push-on, mechanical, or flange joints unless approved otherwise.

(c) Lining and Coating. Water pipes shall be smooth cement lined in accordance with the requirements of AWWA C104. Polyethylene encasement wrap may be required in special soil conditions. Wrapping shall be in accordance with AWWA C105.

(d) Fittings. Fittings shall be cast iron, cement lined and coal tar pitch varnish coated of the Bell and Spigot type and shall conform to ANSI A21.10. Where a specific type of fitting is called for on the Plans, this type shall be used. Fittings shall be all bell, unless indicated otherwise on the Plans. Fitting joints shall be made up with roll-on rubber gaskets. Junctions with other types shall be made with suitable adapters or fittings. Gaskets shall be rubber.

City of Morgan Hill – Public Works Department | GENERAL NOTES | DRAWING NO. W-II
CITY ENGINEER – DATE 4/1/96 – REVISED

DUCTILE IRON (Continued)

(e) Taps. Taps into ductile iron pipe shall be by machine. Contractor shall perform all service taps as the City does not provide this service. Hot taps to main lines will be allowed only upon approval of the City Engineer. Tapping sleeves may only be used where a water main is at least two nominal sizes larger than the proposed branch. Less than two nominal size differential may be allowed upon City Engineer approval, but will not be allowed on water mains that are not ductile iron.

VALVES

All gate valves shall meet the standards of AWWA C509. Flanged ends shall meet the requirements of ANSI B16.1, class 125. Mechanical joint ends shall meet the requirements of AWWA C111. Interior corrosion prevention coatings shall meet the requirements of AWWA C550. All valves shall be resilient wedge, non-rising stem and double O-ring equipped.

Butterfly valves shall only be used upon the direction or approval of the City Engineer and shall meet the requirements of AWWA C504.

BOLTS AND NUTS

Underground bolts and nuts shall be of low carbon steel in accordance with AWWA C141. Stainless steel bolts and nuts may be required upon direction of the City Engineer.

DEPTH

All water lines shall have a minimum of 36 inches cover at any given time, unless directed otherwise by the City Engineer.

MARKER POSTS

Contractor shall place marker posts adjacent to all air relief valves and blow off assemblies along water mains located in unimproved areas or fields. The posts shall be pressure treated redwood 4"x4"x6', painted white, buried 2'-6", and inscribed with "W/A.V." (for air relief valves) or "B.O." (for blow off assemblies), in 3 inch high carved letters painted blue.

City of Morgan Hill – Public Works Department | GENERAL NOTES | DRAWING NO. W-III
CITY ENGINEER – DATE 4/1/96 – REVISED

ALLOWABLE LEAKAGE FOR DUCTILE IRON PIPE

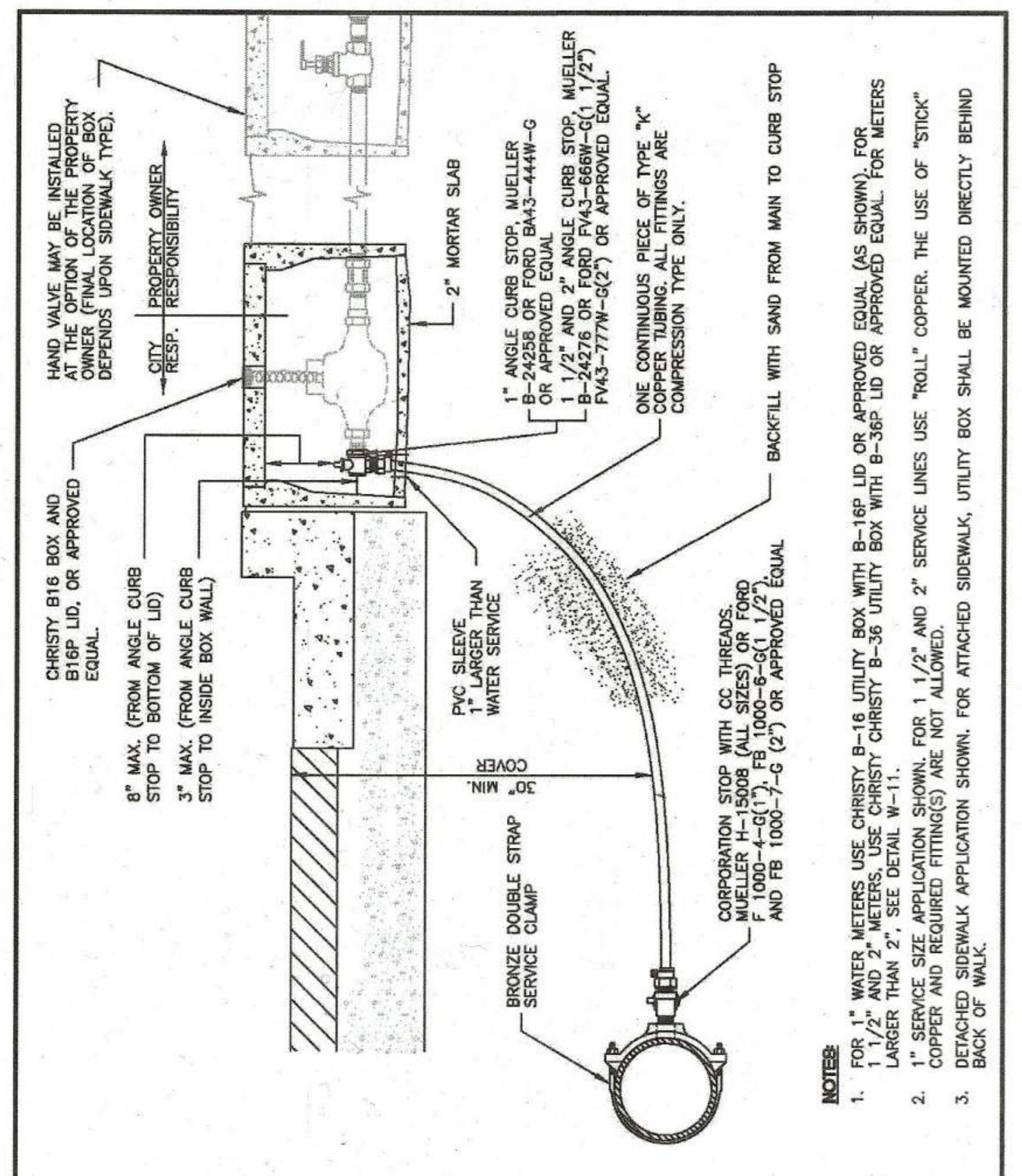
ALLOWABLE LEAKAGE (PER 1000 L.F.)

PIPE DIAMETER (inches)	AVG. TEST PRESSURE AT LOWEST POINT IN THE LINE- PSI						
	50	75	100	125	150	200	225
	LEAKAGE- GAL./HR.						
4	0.21	0.26	0.30	0.34	0.37	0.42	0.45
6	0.32	0.39	0.45	0.50	0.55	0.64	0.68
8	0.42	0.52	0.60	0.67	0.74	0.85	0.90
10	0.53	0.65	0.75	0.84	0.92	1.06	1.13
12	0.64	0.78	0.90	1.01	1.10	1.27	1.35
14	0.74	0.91	1.05	1.18	1.29	1.49	1.58
16	0.85	1.04	1.20	1.34	1.47	1.70	1.80
18	0.96	1.17	1.35	1.51	1.66	1.91	2.03
20	1.06	1.30	1.50	1.68	1.84	2.12	2.25
24	1.27	1.56	1.80	2.01	2.21	2.55	2.70

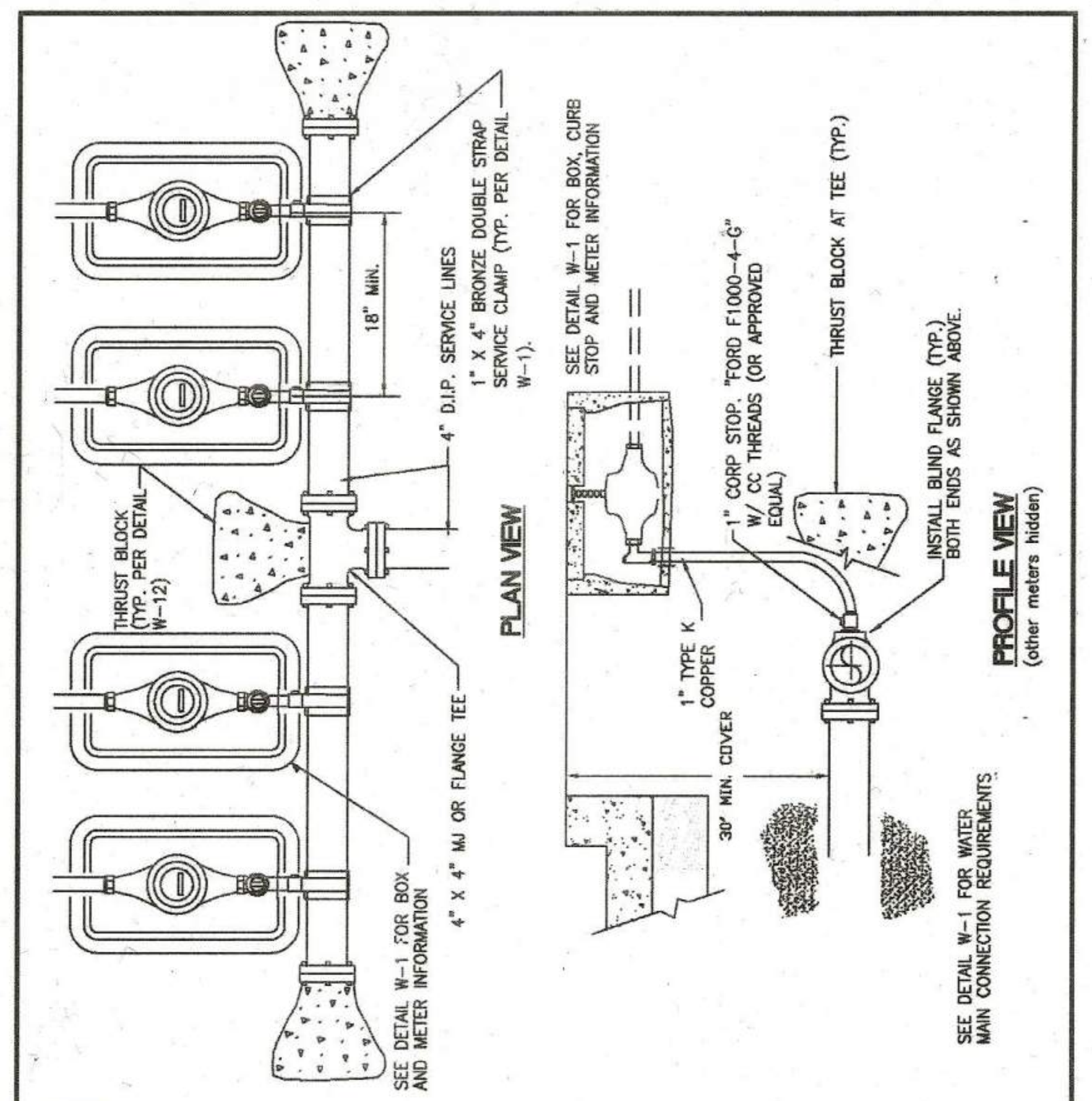
* DATA BASED ON THE FOLLOWING FORMULA:
PER AWWA C600 SEC. 4

$$\frac{(\text{DIA.})(\text{LENGTH})(\sqrt{\text{AVG. TEST PRESSURE}})}{133200} = \text{ALLOWABLE LEAKAGE (GALLONS / HOUR)}$$

City of Morgan Hill – Public Works Department | GENERAL NOTES | DRAWING NO. W-IV
CITY ENGINEER – DATE 4/1/96 – REVISED

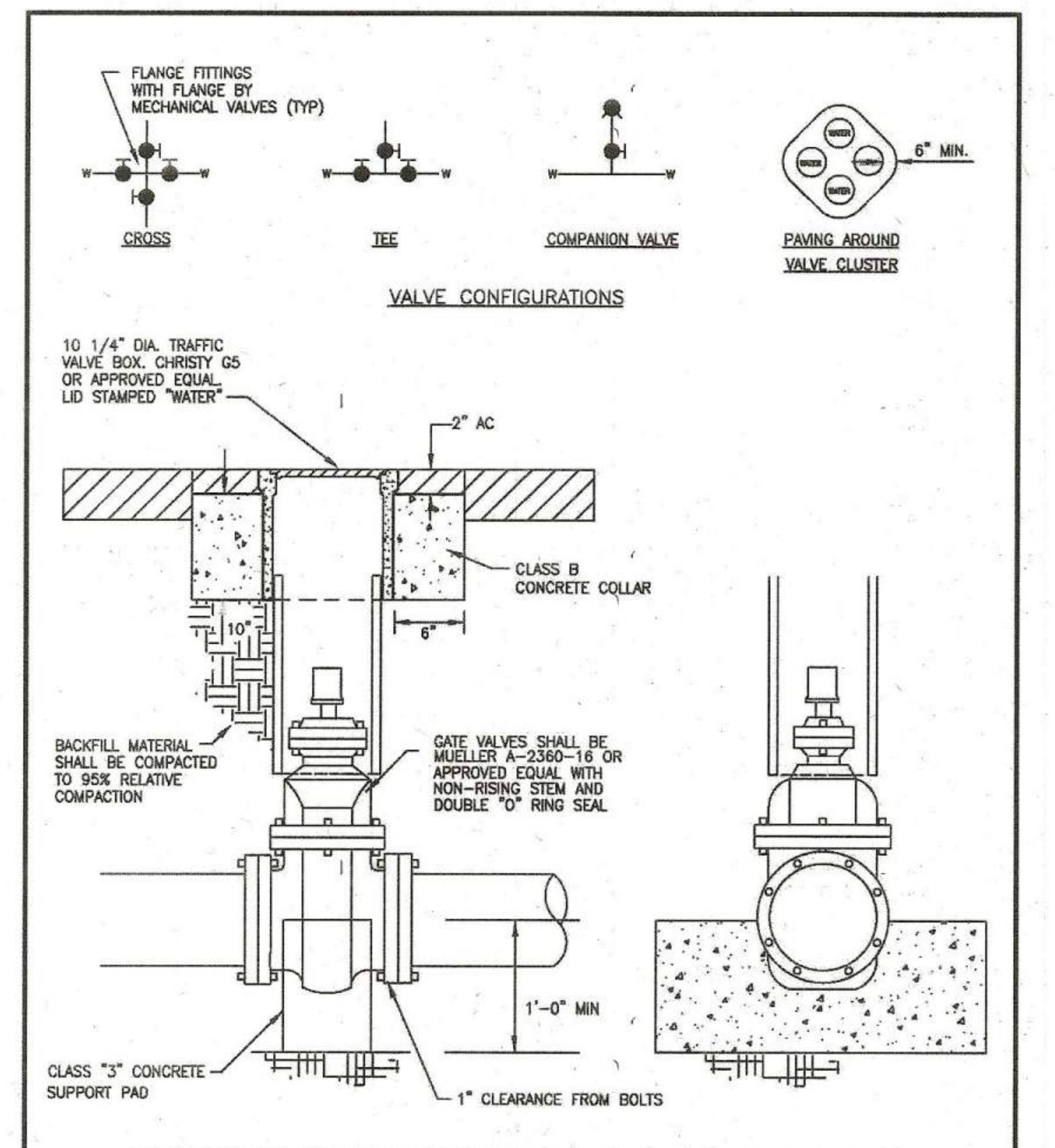


City of Morgan Hill – Public Works Department | TYPICAL WATER SERVICE INSTALLATION | DRAWING NO. W-1
CITY ENGINEER – DATE 4/1/96 – REVISED 3/15/07



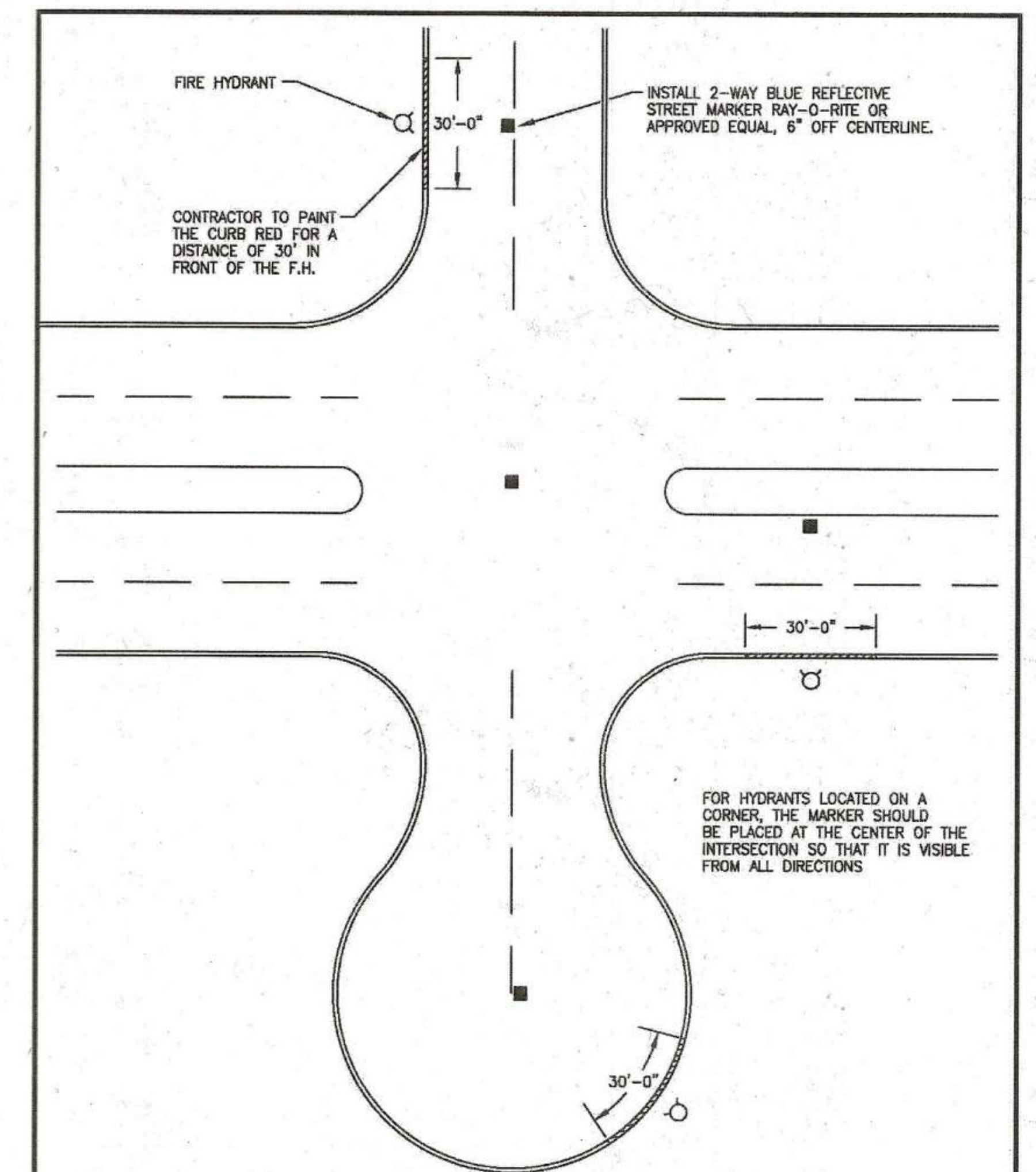
NOTES:
1. STANDARD DETAIL W-1, "RESIDENTIAL WATER SERVICE" IS A PART OF THIS DETAIL, EXCEPT AS MODIFIED HEREIN.
2. ADDITIONAL WATER SERVICES/METERS (MORE THAN 4) SHALL REQUIRE SERVICE LINE GREATER THAN 4".
3. A COMPANION VALVE (EQUAL TO PROPOSED SERVICE SIZE) SHALL BE USED AT CONNECTION OF SERVICE TO MAIN IN STREET (SEE DETAIL W-9 FOR REFERENCE).

City of Morgan Hill – Public Works Department | WATER SERVICE MANIFOLD FOR 4" OR GREATER SERVICE LINE | DRAWING NO. W-3
APPROVED – DATE 11/08/00 – REVISED 3/15/07



VALVES LARGER THAN 12" REQUIRE SPECIAL DETAILS AND SHALL BE APPROVED BY THE CITY ENGINEER.

City of Morgan Hill – Public Works Department | TYPICAL VALVE INSTALLATION | DRAWING NO. W-12
CITY ENGINEER – DATE 4/1/96 – REVISED 3/15/07



City of Morgan Hill – Public Works Department | FIRE HYDRANT LOCATION MARKER | DRAWING NO. W-16
CITY ENGINEER – DATE 4/1/96 – REVISED

City Standard Details
2025 Morgan Hill Water Main Replacment Project

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

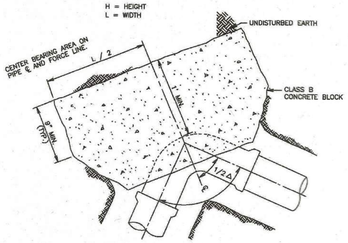
WORK ACCEPTED: BY: DATE: | INSPECTOR:

DRAWN: AEV | DESIGN: KW | HOR. N/A
CHECKED: KW | DATE: | VERT. N/A
APPROVED: [signature] | DATE: 4/9/25 | JOB NO. WA6005
Scott C. Creer RCE 58879 – CITY ENGINEER EXP. DATE 06-30-2025

City of Morgan Hill
Engineering & Utilities
17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236
CITY OF MORGAN HILL

City Standard Details
2025 Morgan Hill Water Main Replacment Project
MORGAN HILL — CALIFORNIA

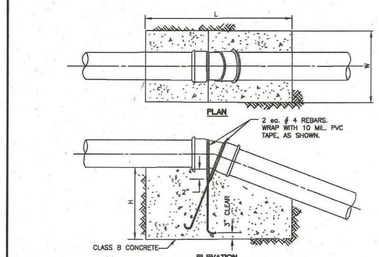
FILE NO. WA6005
PLAN SET: 3/13/2025



NOTES:
1. CONCRETE SHALL BE KEPT CLEAR OF FLANGES, NUTS, AND BOLTS.
2. CENTER OF H COINCIDES WITH CENTERLINE OF PIPE.
3. "MEGA-LUG" (OR APPROVED EQUAL) TYPE GLANDS AND FASTENERS MAY BE USED BUT SHALL NOT BE USED AS A REPLACEMENT FOR THE USE OF THRUST BLOCKS.

PIPE SIZE	DIMENSIONS – L x H (200 PSI TEST) 11 1/4° BEND	22 1/2° BEND	45°	90°
4"–6"	1'0" x 1'0"	1'5" x 1'5"	1'9" x 1'9"	2'3" x 2'3"
8"	1'0" x 1'0"	1'5" x 1'5"	2'0" x 2'0"	2'10" x 2'10"
10"	1'5" x 1'5"	2'0" x 2'0"	2'8" x 2'8"	3'5" x 3'5"
12"	1'9" x 1'9"	2'3" x 2'3"	3'0" x 3'0"	4'2" x 4'2"
14"	1'9" x 1'9"	2'8" x 2'8"	3'6" x 3'6"	4'10" x 4'10"
16"	2'0" x 2'0"	2'10" x 2'10"	4'0" x 4'0"	5'5" x 5'5"
18"	3'0" x 3'0"	4'0" x 4'0"	5'0" x 5'0"	6'6" x 6'6"

City of Morgan Hill Public Works Department			ELBOW THRUST BLOCK HORIZONTAL AND DOWNWARD THRUSTS	DRAWING NO.
Jim Ashcroft CITY ENGINEER	4/1/96 DATE	REVISED		W-17

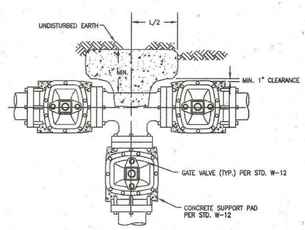


NOTES:
1. CONCRETE SHALL BE KEPT CLEAR OF FLANGES, NUTS & BOLTS.
2. "MEGA-LUG" (OR APPROVED EQUAL) TYPE GLANDS AND FASTENERS MAY BE USED BUT SHALL NOT BE USED AS A REPLACEMENT FOR THE USE OF THRUST BLOCKS.

DIMENSIONS (150 PSI TEST)

PIPE SIZE	11 1/4° BEND L	W	H	22 1/2° BEND L	W	H	45° BEND L	W	H
6"	2'0"	2'0"	1'0"	2'0"	2'0"	2'0"	2'0"	2'0"	2'0"
8"	2'0"	2'0"	1'0"	2'0"	3'0"	2'0"	2'0"	4'0"	2'0"
10"	2'0"	3'0"	2'0"	2'0"	4'0"	2'0"	2'0"	4'0"	3'0"
12"	2'0"	3'0"	2'0"	2'0"	6'0"	2'0"	2'0"	6'0"	3'0"
18"	3'0"	3'0"	3'0"	3'0"	6'0"	3'0"	3'0"	5'0"	5'0"

City of Morgan Hill Public Works Department			ELBOW THRUST BLOCK UPWARD THRUST	DRAWING NO.
Jim Ashcroft CITY ENGINEER	4/1/96 DATE	REVISED		W-18

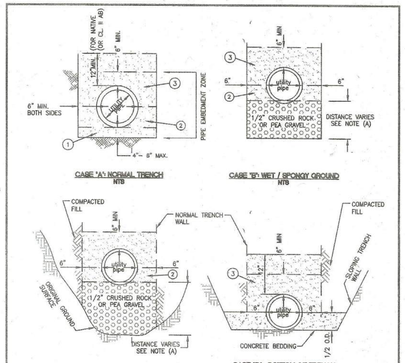


NOTES:
1. CONCRETE SHALL BE KEPT CLEAR OF FLANGES, NUTS, AND BOLTS.
2. "MEGA-LUG" (OR APPROVED EQUAL) TYPE GLANDS AND FASTENERS MAY BE USED BUT SHALL NOT BE USED AS A REPLACEMENT FOR THE USE OF THRUST BLOCKS.

BLOCKING FOR PIPE TEES

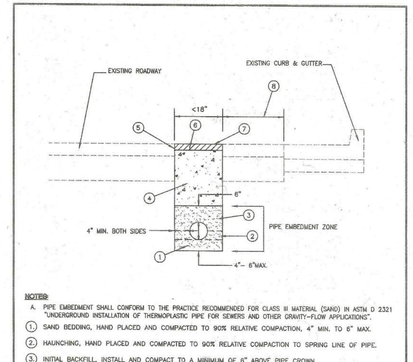
PIPE SIZE	BEARING (SQ. FT.)	L x H
6"	3	1'-9"x1'-9"
8"	5	2'-3"x2'-3"
10"	9	3'-0"x3'-0"
12"	12	3'-6"x3'-6"
10"	16	4'-0"x4'-0"
12"	21	4'-7"x4'-7"

City of Morgan Hill Public Works Department			TEE THRUST BLOCK	DRAWING NO.
Jim Ashcroft CITY ENGINEER	4/1/96 DATE	REVISED		W-19



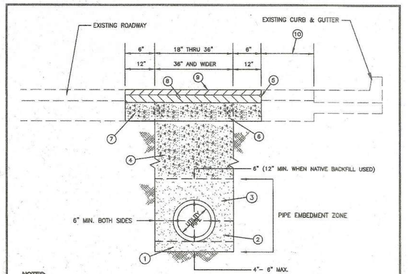
NOTES:
(A) DISTANCE WILL VARY BASED UPON FIELD CONDITIONS, AND SOILS REPORT RECOMMENDATIONS.
(B) PIPE EMBEDMENT SHALL CONFORM TO THE PRACTICE RECOMMENDED FOR CLASS III MATERIAL (SAND) IN ASTM D 2321 UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS".
1. SAND BEDDING, HAND PLACED AND COMPACTED TO MIN. 90% RELATIVE COMPACTION, 4" MIN. TO 6" MAX.
2. HAUNCHING; HAND PLACED AND COMPACTED TO MIN. 90% RELATIVE COMPACTION TO SPRING LINE OF PIPE.
3. INITIAL BACKFILL, INSTALL AND COMPACT TO A MINIMUM OF 6" ABOVE PIPE CROWN (12" MIN. FOR NATIVE).

City of Morgan Hill Public Works Department			TRENCH BEDDING	DRAWING NO.
Jim Ashcroft CITY ENGINEER	4/1/96 DATE	REVISED		U-1



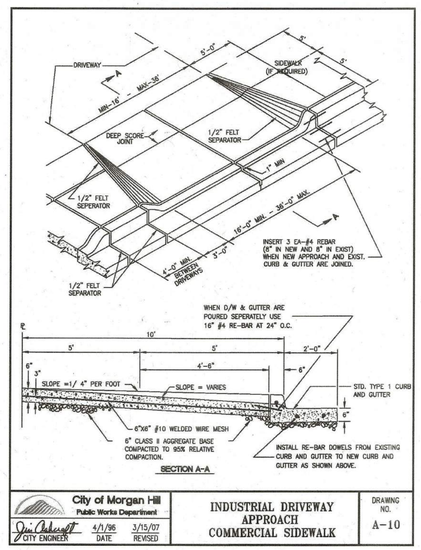
NOTES:
A. PIPE EMBEDMENT SHALL CONFORM TO THE PRACTICE RECOMMENDED FOR CLASS III MATERIAL (SAND) IN ASTM D 2321 "UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS".
1. SAND BEDDING, HAND PLACED AND COMPACTED TO 90% RELATIVE COMPACTION, 4" MIN. TO 6" MAX.
2. HAUNCHING, HAND PLACED AND COMPACTED TO 90% RELATIVE COMPACTION TO SPRING LINE OF PIPE.
3. INITIAL BACKFILL, INSTALL AND COMPACT TO A MINIMUM OF 6" ABOVE PIPE CROWN.
4. 1.5 SACK CEMENT SLURRY BACK FILL. CEMENT SLURRY BACKFILL TO BE CURED PER MANUFACTURERS REQUIREMENTS PRIOR TO PAVING.
5. SAW CUT EXISTING PAVEMENT, ALL VERTICAL EDGES SHALL BE TACKED PRIOR TO PAVING.
6. 1 1/2" AC (1/2" TYPE B).
7. SURFACE SHALL BE FOG SEALED AFTER PAVING. EXISTING ROADWAY SURFACE SHALL BE REPLACED IN KIND (OIL & SCREENED, SLURRY SEAL, ETC.)
8. IF DISTANCE IS LESS THAN 3 FEET, PAVEMENT RESTORATION SHALL EXTEND TO LIP OF GUTTER.

City of Morgan Hill Public Works Department			TRENCH RESTORATION/BACKFILL FOR TRENCH WIDTHS LESS THAN 18"	DRAWING NO.
Jim Ashcroft CITY ENGINEER	4/1/96 DATE	3/15/07 REVISED		U-2



NOTES:
A. PIPE EMBEDMENT SHALL CONFORM TO THE PRACTICE RECOMMENDED FOR CLASS III MATERIAL (SAND) IN ASTM D 2321 "UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS".
1. SAND BEDDING, HAND PLACED AND COMPACTED TO MIN. 90% RELATIVE COMPACTION, 4" MIN. TO 6" MAX.
2. HAUNCHING; HAND PLACED AND COMPACTED SAND TO MIN. 90% RELATIVE COMPACTION TO SPRING LINE OF PIPE.
3. INITIAL SAND BACKFILL, INSTALL AND COMPACT TO A MINIMUM OF 6" ABOVE PIPE CROWN (12" MIN. FOR NATIVE).
4. 100% CLASS 2 AGGREGATE BASE ROCK BACKFILL COMPACTED IN LIFTS TO 95% RELATIVE COMPACTION. FLOODING OR JETTING SHALL ONLY BE ALLOWED UPON CITY ENGINEER APPROVAL. NATIVE BACKFILL MAY BE USED DURING THE CONSTRUCTION OF NEW STREETS ONLY AND SHALL BE USED ONLY UPON APPROVAL OF THE CITY ENGINEER AND UPON THE RECOMMENDATION OF A QUALIFIED SOILS ENGINEER/SOILS REPORT.
5. SAW CUT EXISTING PAVEMENT, ALL VERTICAL EDGES SHALL BE TACKED PRIOR TO PAVING.
6. 8" (MIN) CLASS 2 AGGREGATE BASE ROCK, COMPACTED TO 95% RELATIVE COMPACTION.
7. AT THE DISCRETION OF THE PROJECT INSPECTOR, THE EXISTING BASE ROCK MAY REMAIN FOR THIS TRENCH WIDTH PROVIDED THAT THE BASE ROCK IS COMPACTED AND IS NOT CONTAMINATED.
8. MATCH EXIST. AC SECTION OR 6" MIN. IN 2 LIFTS. BASE COURSE TO BE 3/4" TYPE B AC, AND SURFACE COURSE TO BE 1/2" TYPE B AC.
9. SURFACE SHALL BE FOG SEALED AFTER PAVING. EXISTING ROADWAY SURFACE SHALL BE REPLACED IN KIND.
10. IF DISTANCE IS LESS THAN 3 FEET, PAVEMENT RESTORATION SHALL EXTEND TO LIP OF GUTTER.

City of Morgan Hill Public Works Department			TRENCH RESTORATION/BACKFILL FOR TRENCH WIDTHS GREATER THAN 18"	DRAWING NO.
Jim Ashcroft CITY ENGINEER	4/1/96 DATE	3/15/07 REVISED		U-3



City of Morgan Hill Public Works Department			INDUSTRIAL DRIVEWAY APPROACH COMMERCIAL SIDEWALK	DRAWING NO.
Jim Ashcroft CITY ENGINEER	4/1/96 DATE	3/15/07 REVISED		A-10

NO.	DESCRIPTION	DATE	BY

REVISIONS

WORK ACCEPTED: INSPECTOR:
BY: DATE:

DRAWN:	DESIGN:	HOR.
AEV	KW	N/A
CHECKED: KW	DATE:	VERT. N/A
APPROVED:	DATE: 4/9/25	JOB NO. WA6005

Scott C. Creer RCE 56679 CITY ENGINEER EXP. DATE 06-30-2025

CITY OF MORGAN HILL

City of Morgan Hill
Engineering & Utilities
17575 PEAK AVE. MORGAN HILL, CA 95037
(408) 776-6480 FAX (408) 779-7236

City Standard Details
2025 Morgan Hill Water Main Replacment Project
MORGAN HILL CALIFORNIA

FILE NO. WA6005
PLAN SET: 3/13/2025
DRAWING: 8 OF 8

City Standard Details

2025 Morgan Hill Water Main Replacment Project