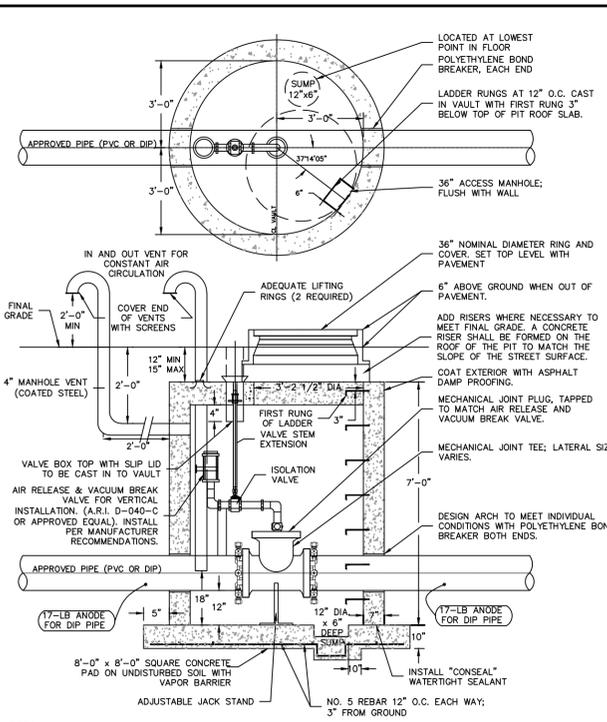


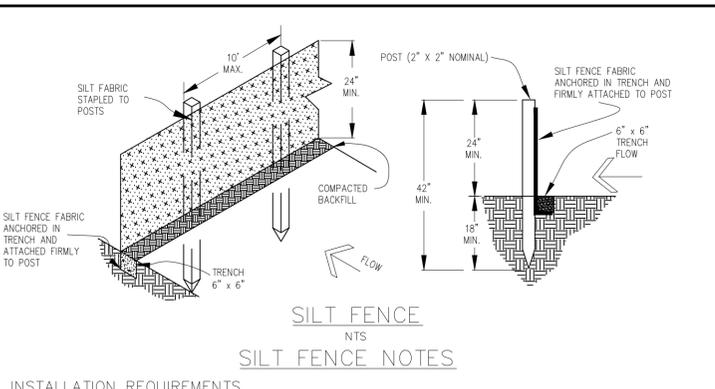
**PIPE CHART**

PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'-4"	4'-0"
6"	1'-6"	4'-0"
8"	1'-8"	4'-0"
12"	2'-0"	4'-0"
18"	3'-0"	4'-0"
24"	3'-6"	4'-0"
30"	4'-0"	6'-0"
36"	5'-0"	6'-0"
42"	6'-0"	8'-0"
48"	6'-0"	8'-0"
54"	8'-0"	8'-0"
60"	8'-0"	8'-0"
66"	8'-0"	10'-0"
72"	10'-0"	12'-0"



- NOTES:**
- ALL CONCRETE WORK SHALL COMPLY WITH LATEST ACI-318 SPECIFICATIONS.
  - ALL LADDER RUNGS MUST LINE UP BOTH HORIZONTALLY AND VERTICALLY.
  - ALL SUPPORT MATERIALS SHALL BE GIVEN 2 COATS OF RUST INHIBITIVE PAINT.
  - ALL LADDER RUNGS MUST LINE UP BOTH HORIZONTAL AND VERTICAL.
  - AIR AND VACUUM VALVE STATIONS TO BE HOUSED IN A 6" DIAMETER PRECAST CONCRETE VAULT DESIGNED FOR HS-20 LOADING CONDITIONS AND 300 PSF SURCHARGE LOAD.
  - GROUT ALL ARCHES FULL W/PORTLAND CEMENT, NON-SHRINK GROUT. SEAL AS NECESSARY FOR WATERTIGHT CONNECTION.

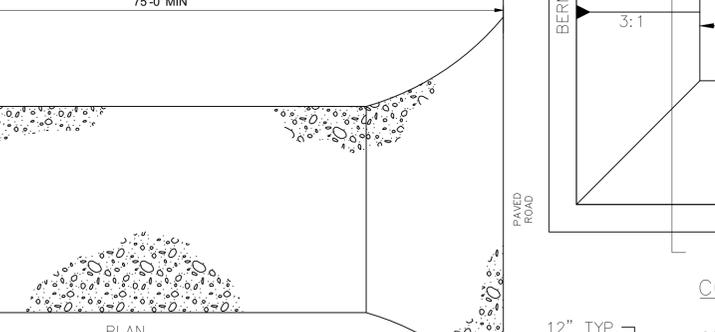
**AIR-VAC STATION  
STA 34+82.02 SHEET 7  
& STA 45+85.33 SHEET 8  
SCALE : N.T.S.**



- INSTALLATION REQUIREMENTS**
- SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
  - WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.
  - METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
  - THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #9 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.
  - WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3/4" LONG. TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXTEND MORE THAN 3' ABOVE THE ORIGINAL GROUND SURFACE.
- MAINTENANCE REQUIREMENTS**
- CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL. AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNINTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.
  - SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.
  - SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.

- CONCRETE WASHOUT AREA PLAN**
- 75'-0" MIN
- 8'x8' MIN.
- 3:1
- 3:1
- 3:1
- 3:1
- 25' MIN.

**CONCRETE WASHOUT AREA PLAN  
NTS**

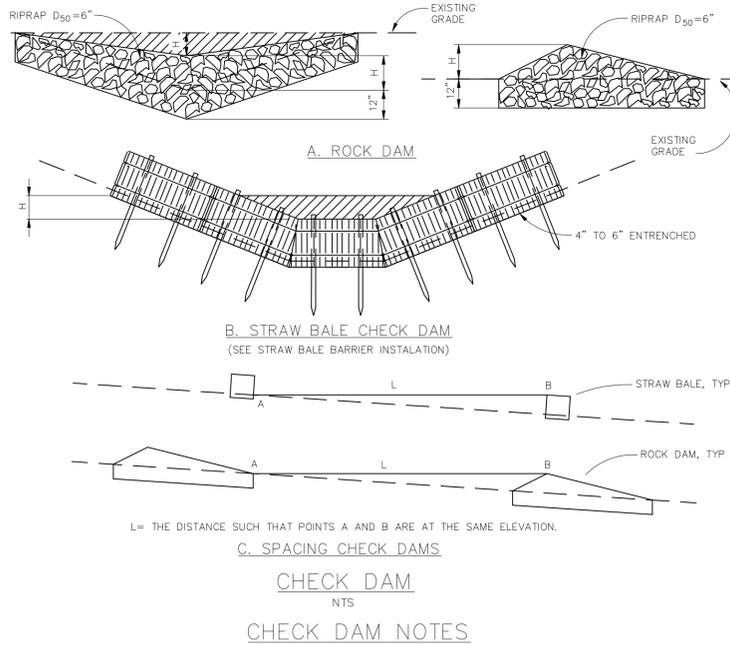


- VEHICLE TRACKING NOTES**
- INSTALLATION REQUIREMENTS**
- ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
  - CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.
  - AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.
  - CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.
  - CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.
- MAINTENANCE REQUIREMENTS**
- REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
  - STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
  - SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.
  - STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.
  - OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

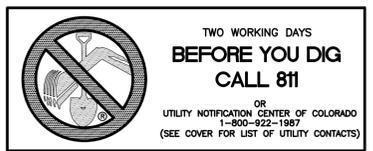
- CWA INSTALLATION NOTES:**
- SEE PLAN VIEW FOR CWA INSTALLATION LOCATION.
  - DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE SHOULD BE USED.
  - THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
  - CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' X 8'. SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
  - BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE A MINIMUM HEIGHT OF 1'.
  - VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
  - SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
  - USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.
- CWA MAINTENANCE NOTES:**
- INSPECT BMPs EACH WORKDAY AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
  - CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
  - THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
  - WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOPSOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

**TYPICAL TRENCH & BEDDING DETAIL  
SCALE : N.T.S.**

**NOTE:**  
STAGGING AREA, VTC AND CWA TO BE LOCATED AND UPDATED IN THE CONTRACTORS SWMP.



- INSTALLATION REQUIREMENTS**
- STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SBB-2.
  - THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.
- MAINTENANCE REQUIREMENTS**
- REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.
  - REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.
  - ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.
  - CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.
  - WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.



LEGEND		
SYMBOL	ACRONYM	DESCRIPTION
[Symbol]	RCP W/FES	REINFORCED CONCRETE PIPE W/FLARED END SECTIONS
[Symbol]	INLET	STORM SEWER INLET BOX
[Symbol]	STMH	STORM SEWER MANHOLE
[Symbol]	ST	STORM SEWER LINE
[Symbol]	SS	SANITARY SEWER MAIN
[Symbol]	MR SSMH	SANITARY SEWER MANHOLE
[Symbol]	WM	WATER MAIN (ALL PIPES PVC, UNLESS OTHERWISE NOTED)
[Symbol]	GV	WATER GATE VALVE
[Symbol]	BV	WATER BUTTERFLY VALVE
[Symbol]	BOV	WATER BLOW-OFF VALVE
[Symbol]	HYD ASSY	FIRE HYDRANT ASSEMBLY
[Symbol]	TEE W/GV	WATER TEE W/ GATE VALVES
[Symbol]		ANODE (CATHODIC PROTECTION)
[Symbol]		TEST STATION
[Symbol]	HB	HAY BALE DAM (interim)
[Symbol]	SF	SILT FENCE (initial/interim)
[Symbol]		ROCK DAM (interim)
[Symbol]	EXIST	EXISTING FEATURES
[Symbol]	PI	POINT OF INTERSECTION
[Symbol]		EXISTING CONTOUR (10')
[Symbol]		EXISTING CONTOUR (2')
[Symbol]		FLOW DIRECTION ARROW
[Symbol]		VEHICLE TRACKING CONTROL (initial/interim)
[Symbol]		CONCRETE WASHOUT (interim)
[Symbol]	VTC	CONSTRUCTION BOUNDARY
[Symbol]	CWA	LIMITS OF DISTURBANCE

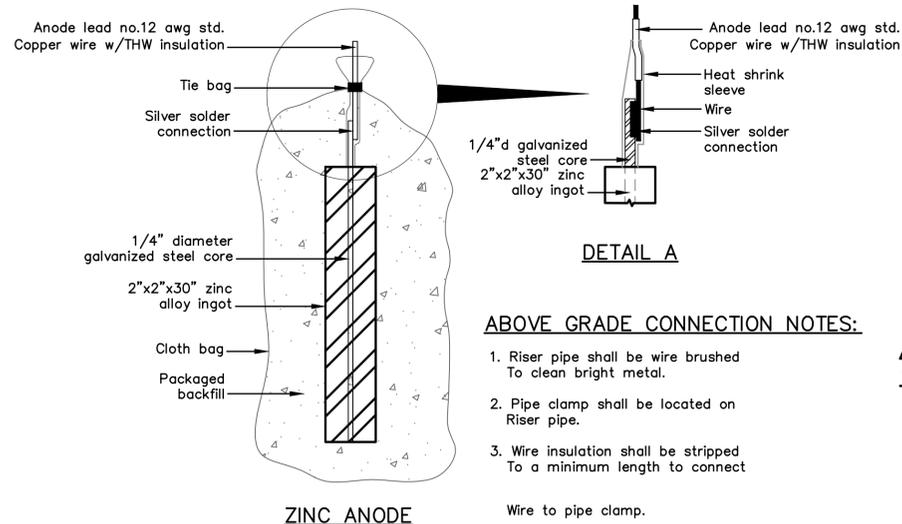
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TELEPHONE: 719.495.7444  
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**MERIDIAN SERVICE  
METROPOLITAN DISTRICT  
LATIGO EASTONVILLE WATER  
PIPELINE  
DETAIL SHEET**

Scale	AS SHOWN	3 of 10
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		TAK
Date	FEBRUARY 2023	





ZINC ANODE

ZINC ANODE AND CONNECTORS FOR 1" AND 2" WATER SERVICE

ABOVE GRADE CONNECTION NOTES:

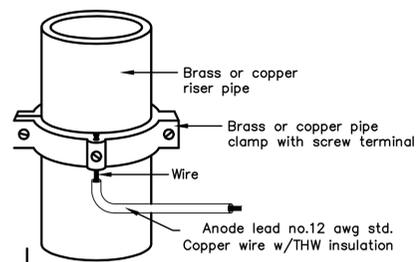
1. Riser pipe shall be wire brushed To clean bright metal.
2. Pipe clamp shall be located on Riser pipe.
3. Wire insulation shall be stripped To a minimum length to connect

Wire to pipe clamp.

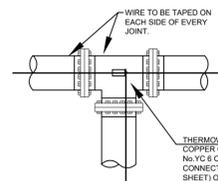
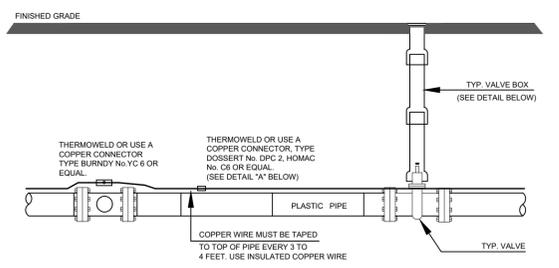
PACKAGED BACKFILL COMPOSITION:

75% gypsum  
20% bentonite  
5% sodium sulfate

Ingot weight: 30 lbs.  
Pkgd. Weight: 70 lbs. Approx.



ANODE LEAD ABOVE GRADE CONNECTION



NOTE

1. Contractor is responsible for continuity of all tracer wire.
2. Tracer wire is required on all pipes per MSMD specifications ( PVC and HDPE).

FIELD INSTALLATION OF POLYETHYLENE WRAP FOR DIP PIPE AND FITTINGS.

STEP 1:

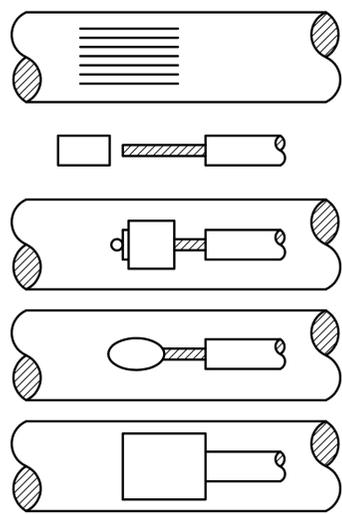
PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.

STEP 2:

PULL TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO END AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE. INSTALL BONDING STRAP OR WIRE AT EVERY JOINT OF PIPE PRIOR TO WRAPPING.

STEP 3:

OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

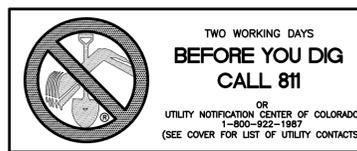


- STEP 1. File structure connection area (3 in x 3 in) to bare shiny metal and clean.
- STEP 2. Strip insulation from wire. Attach sleeve where required by manufacturer.
- STEP 3. Hold mold firmly with opening away from operator and ignite with flint gun.
- STEP 4. Remove slag from connection and peen weld for soundness.
- STEP 5. Cover connection and exposed structure surface with a bituminous coating compound. Place plastic shield cap firmly over connection.

NOTES:

1. All wire welds shall be minimum 3 inches apart.
2. Standard weld cartridges shall be used for steel surfaces.

EXOTHERMIC WELD PROCESS



Anode Design

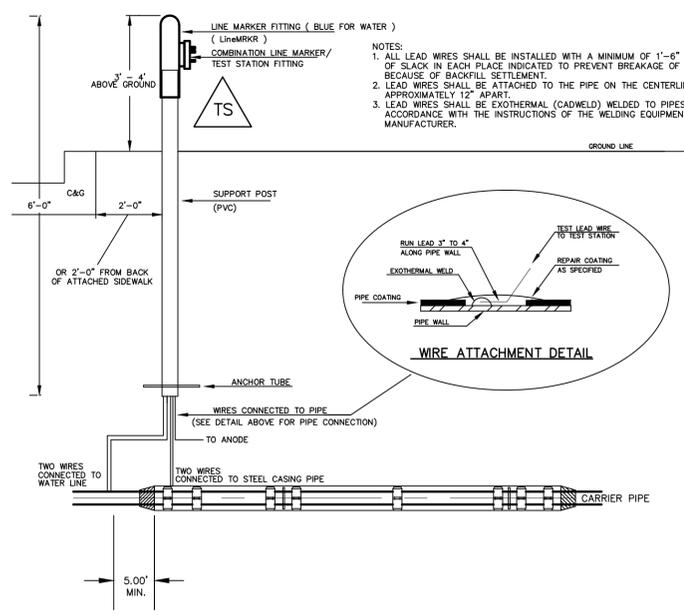
For use with DIP in conjunction with poly-wrap sleeves and piping in 1000 ohm-cm soil estimating a 5% holiday area.

Pipe Size Inches	Actual OD Inches	Anode Spacing Feet (see note 2)	Anode Weight (lb)
4	4.8	763	17 lb
6	6.9	531	17 lb
8	9.05	405	17 lb
12	13.20	277	17 lb
16	16	210	32 lb
20	20	169	32 lb
24	24	142	48 lb
30	30	114	48 lb
36	36	95.7	48 lb
42	42	82.4	48 lb
48	48	72.1	48 lb
54	54	64.2	48 lb

The distance from the point of the beginning to the first anode shall not exceed one half the recommended spacing.

NOTES

1. Cadweld connection to be primed and coated carefully. Packed anode should be covered with fine soil containing no rocks or dirt clumps, tamped.
2. When anodes are required with metal fittings and appurtenances together with PVC pipe installations, the anodes shall be placed and attached to the metal fittings in same manner as shown on this drawing. 9 lb anodes can be used on metal fittings when using PVC pipe.
3. Packaged anode to be wetted and covered with soil prior to backfilling.



TYPICAL DETAIL FOR TEST STATION WITH STEEL SLEEVE INSTALLATION

NOTES:

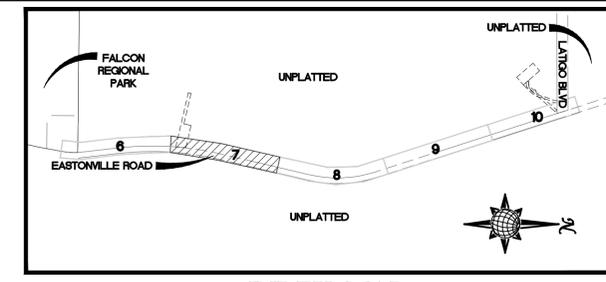
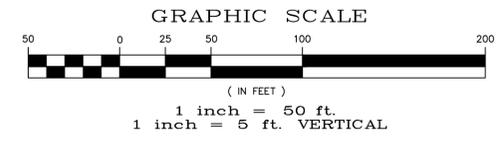
- 1.) Lowerings to be cathodically protected under the direction of the MSMD Inspector, per standards. (For anode size see detail above.)
- 2.) Example can vary due to site conditions and MSMD Inspector's direction's.
- 3.) Reference Colorado Springs Utilities Standard Detail Drawing No. A 8-6 - Steel Sleeve Installation.

1	2	3	4	No.	Revisions	Date	Appr.
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<p>MERIDIAN SERVICE METROPOLITAN DISTRICT LATIGO EASTONVILLE WATER PIPELINE DETAIL SHEET</p>							
Scale	AS SHOWN	Drawn by	LOG	Checked by	TAK	Date	FEBRUARY 2023
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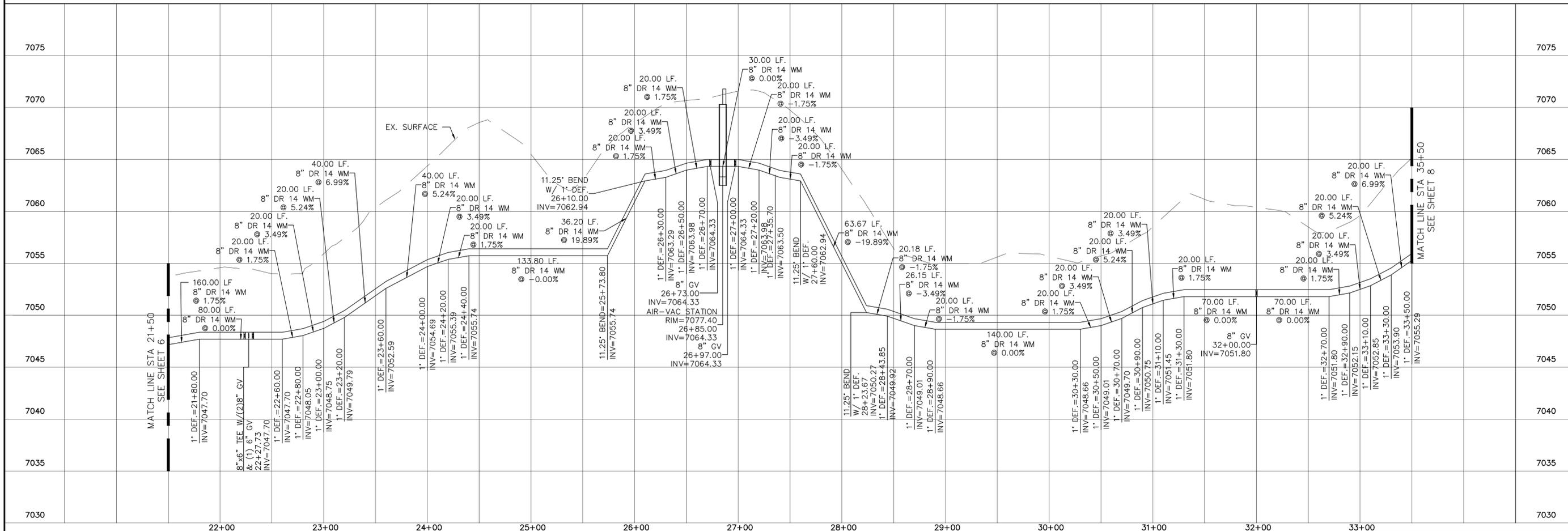
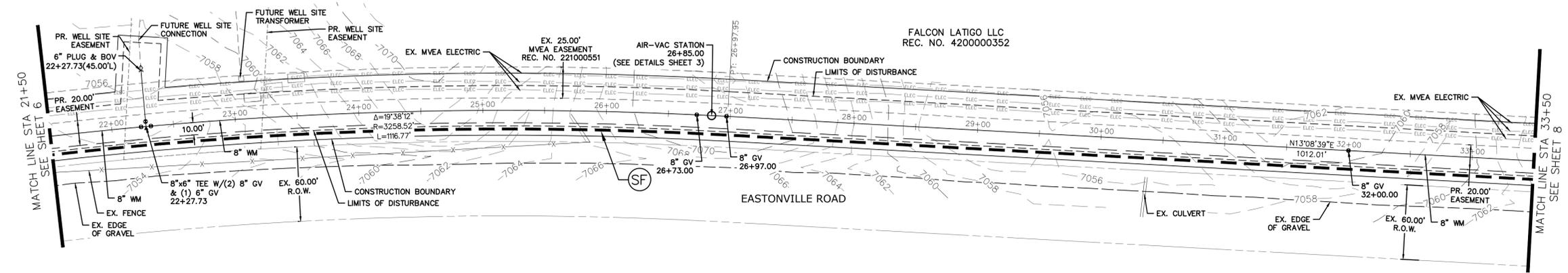




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CALL 811**  
OR  
UTILITY NOTIFICATION CENTER OF COLORADO  
1-800-922-1987  
(SEE COVER FOR LIST OF UTILITY CONTACTS)



**INDEX MAP**  
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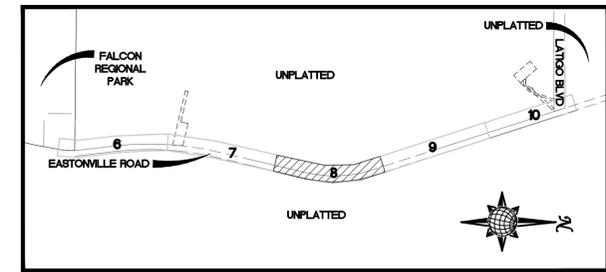
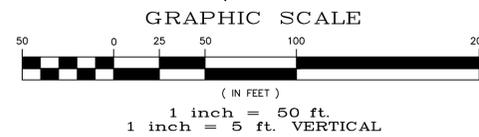
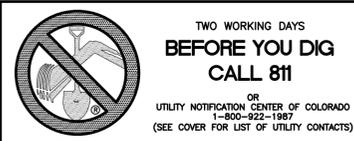
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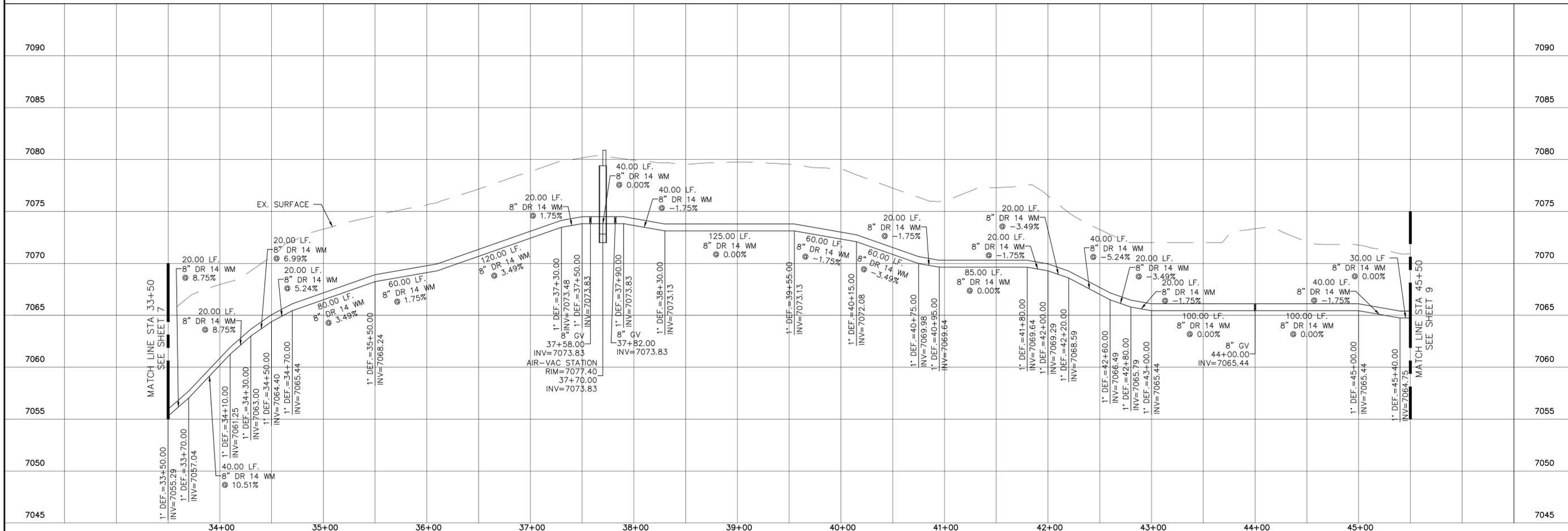
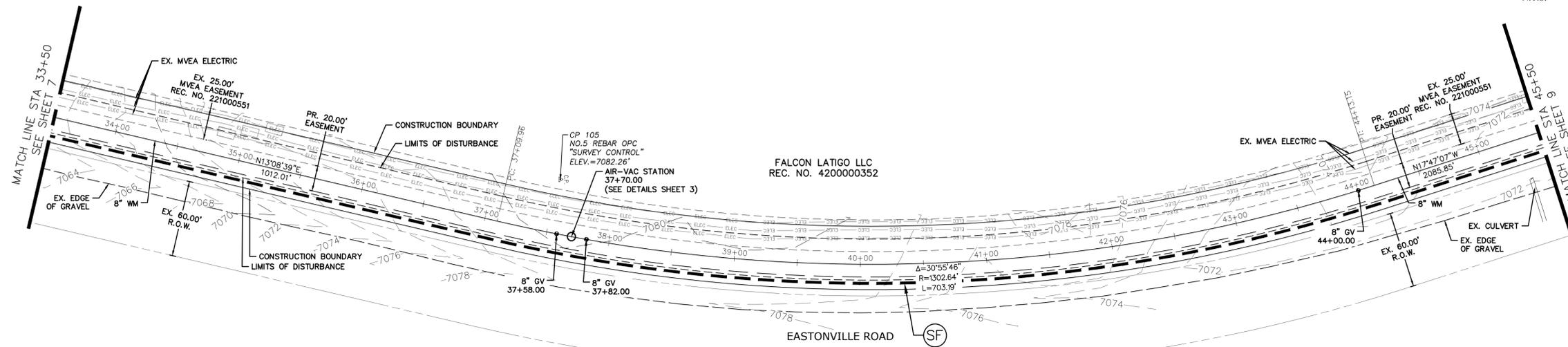


**MERIDIAN SERVICE**  
METROPOLITAN DISTRICT  
LATIGO EASTONVILLE WATER  
PIPELINE  
PLAN AND PROFILE

Scale	AS SHOWN
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INDEX MAP  
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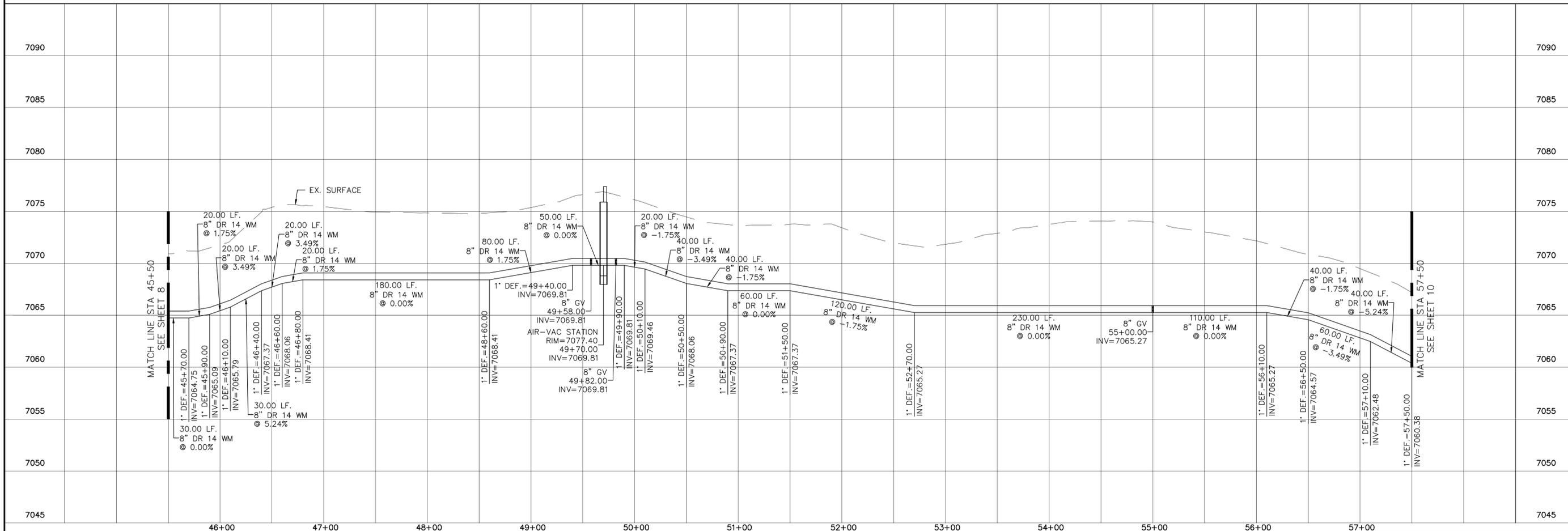
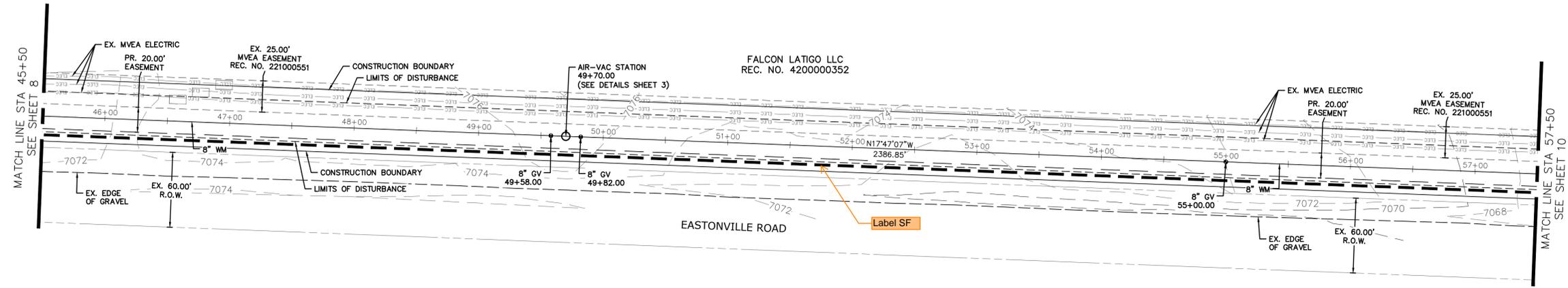
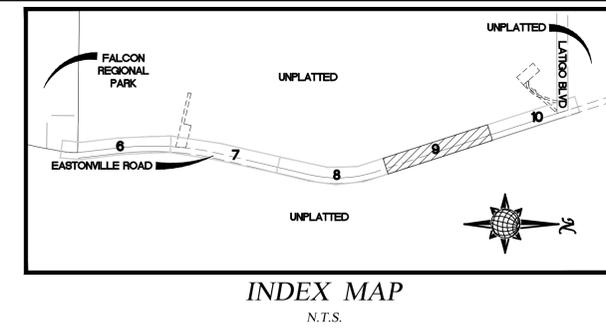
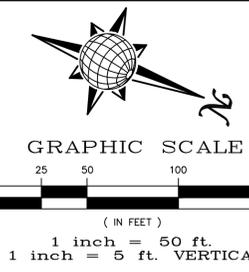
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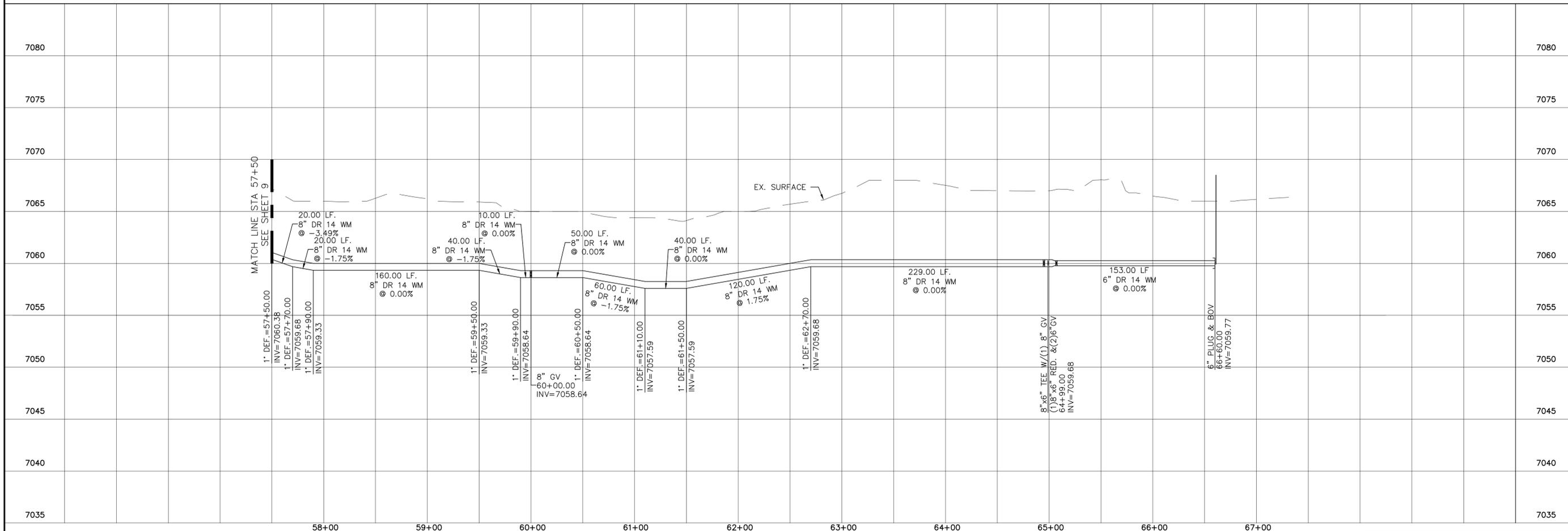
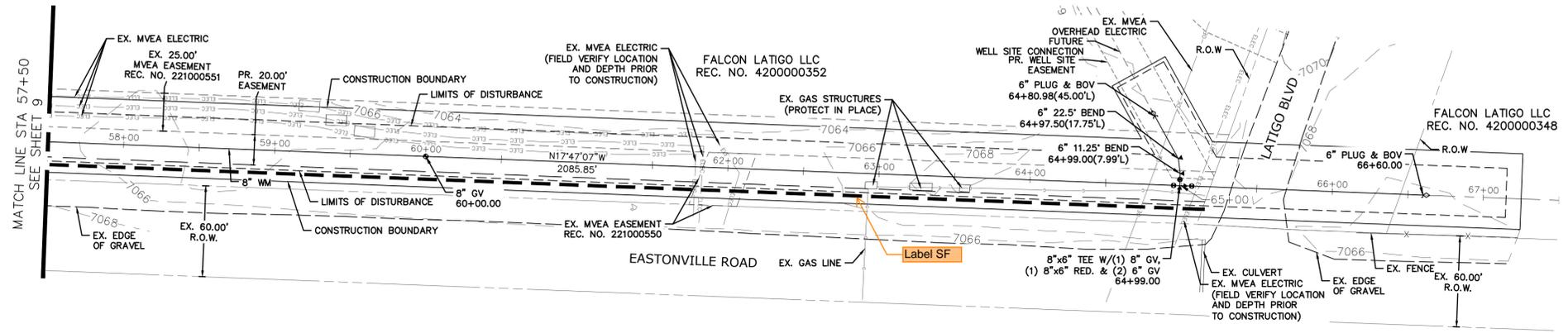
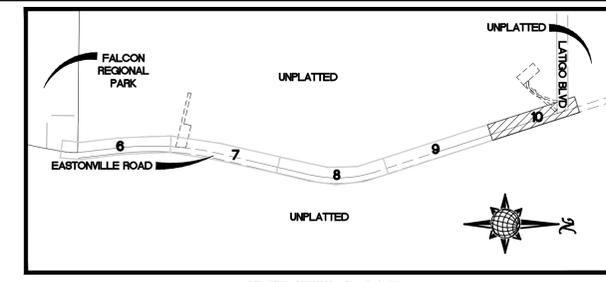
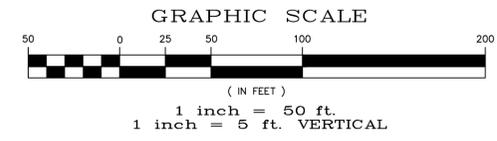
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MERRIDIAN SERVICE		MERRIDIAN SERVICE		MERRIDIAN SERVICE		MERRIDIAN SERVICE	
EST. 2000		EST. 2000		EST. 2000		EST. 2000	
METROPOLITAN DISTRICT		METROPOLITAN DISTRICT		METROPOLITAN DISTRICT		METROPOLITAN DISTRICT	
MERRIDIAN SERVICE		MERRIDIAN SERVICE		MERRIDIAN SERVICE		MERRIDIAN SERVICE	
METROPOLITAN DISTRICT		METROPOLITAN DISTRICT		METROPOLITAN DISTRICT		METROPOLITAN DISTRICT	
LATIGO EASTONVILLE WATER		LATIGO EASTONVILLE WATER		LATIGO EASTONVILLE WATER		LATIGO EASTONVILLE WATER	
PIPELINE		PIPELINE		PIPELINE		PIPELINE	
PLAN AND PROFILE		PLAN AND PROFILE		PLAN AND PROFILE		PLAN AND PROFILE	