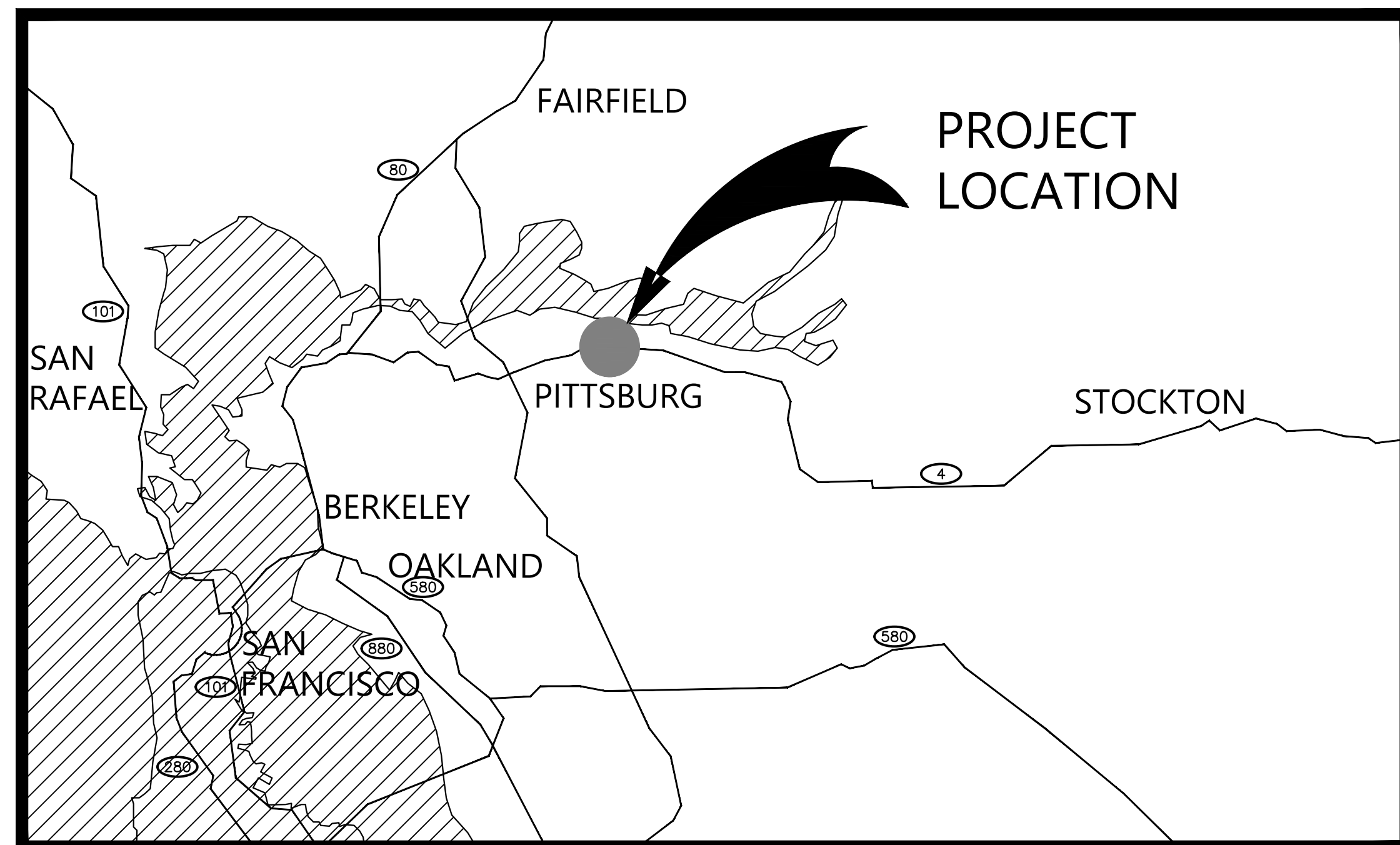



# CITY OF PITTSBURG

## PUBLIC WORKS ENGINEERING DIVISION WILLOW PASS ROAD STORM DRAIN REPAIR PROJECT PROJECT No. 3023



VICINITY MAP  
NOT TO SCALE

  
JOHN SAMUELSON, P.E., CITY ENGINEER, CE 67734

DATE: 9/12/24

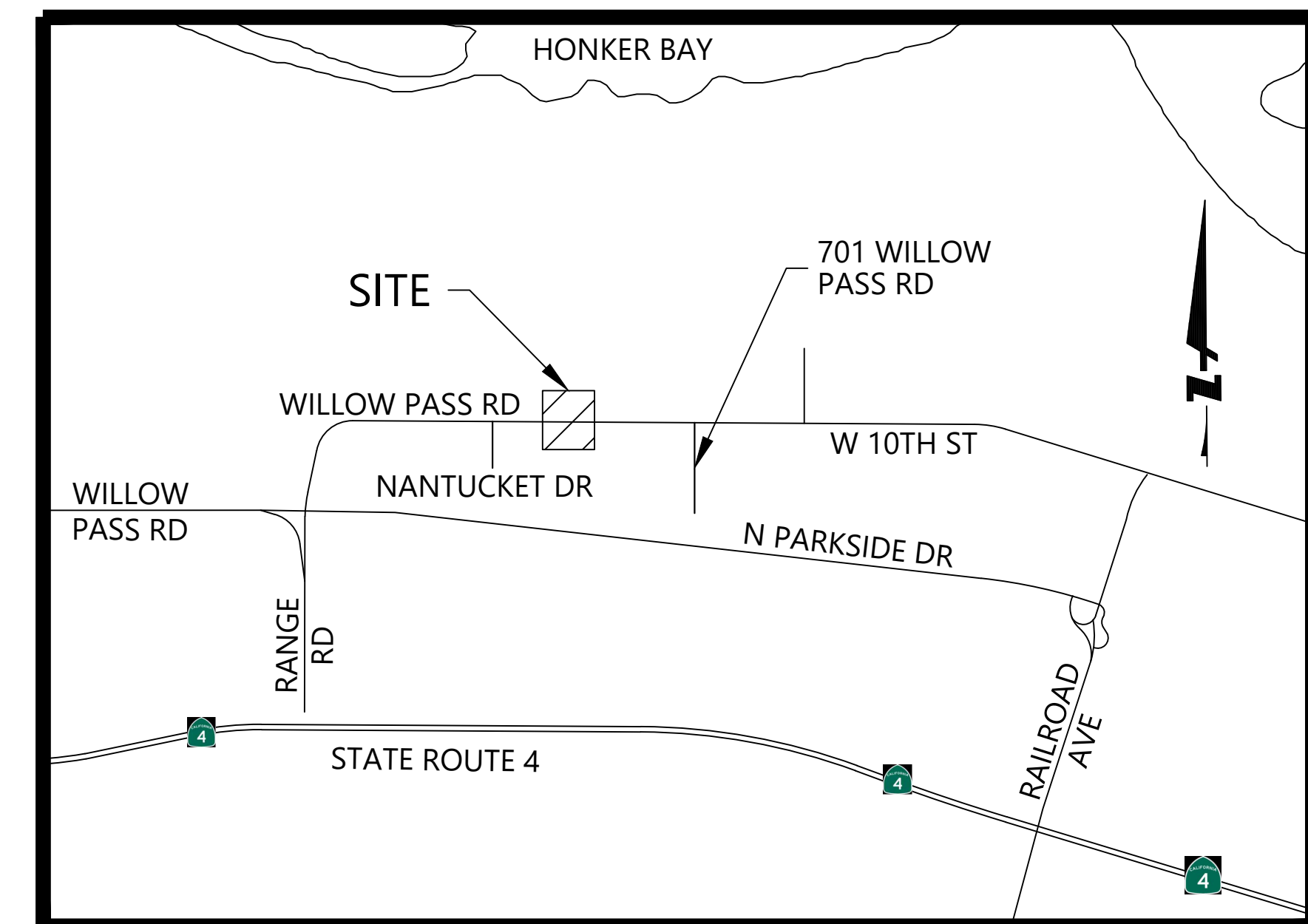
ACCEPTANCE OF THESE IMPROVEMENT PLANS BY THE CITY ENGINEER SHALL NOT RELIEVE THE ENGINEER OF RECORD FOR THE DESIGN NOR FROM ANY DEFICIENCIES RESULTING FROM THE DESIGN THEREOF.

CITY ENGINEER SHALL SIGN ANY REVISION PRIOR OR DURING CONSTRUCTION. A COPY OF THE REVISION SHALL BE SUBMITTED TO THE CITY THROUGH ELECTRONIC OR HARD COPY FORMAT.

A "RECORD DRAWING" SHALL BE SUBMITTED TO THE CITY THROUGH ELECTRONIC OR HARD COPY PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.

SHEET LIST TABLE		
SHEET No.	DRAWING No.	SHEET TITLE
1	TS-01	TITLE SHEET
2	EX-01	EXISTING CONDITIONS AND DEMOLITION PLAN
3	IM-01	IMPROVEMENT PLAN
4	UT-01	UTILITY PLAN
5	GR-01	GRADING PLAN
6	CD-01	CONSTRUCTION DETAILS

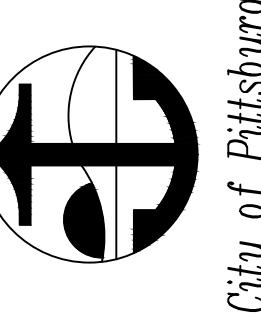
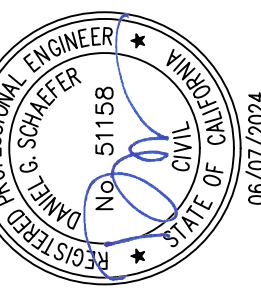
ATTENTION IS DIRECTED TO THE PROVISIONS OF CHAPTER 9 OF DIVISION 3 OF THE BUSINESS AND PROFESSIONS CODE CONCERNING THE LICENSING OF CONTRACTORS. THE PRIME CONTRACTOR SHALL POSSESS A CALIFORNIA CLASS "A" OF "C-12" LICENSE AT THE TIME THIS CONTRACT IS AWARDED.



LOCATION MAP  
NOT TO SCALE

THE CITY COUNCIL  
OF THE CITY OF PITTSBURG  
  
JUAN ANTONIO BANALES, MAYOR  
JELANI KILLINGS, VICE MAYOR  
SHANELLE SCALES-PRESTON, COUNCIL MEMBER  
DIONNE ADAMS, COUNCIL MEMBER  
ANGELICA LOPEZ, COUNCIL MEMBER

GARRETT EVANS, CITY MANAGER  
ALICE E. EVENSON, CITY CLERK  
JOHN SAMUELSON, PUBLIC WORKS DIRECTOR/CITY ENGINEER



WILLOW PASS ROAD STORM DRAIN REPAIR PROJECT  
PROJECT No. 3023

TITLE SHEET

CITY OF PITTSBURG, CA

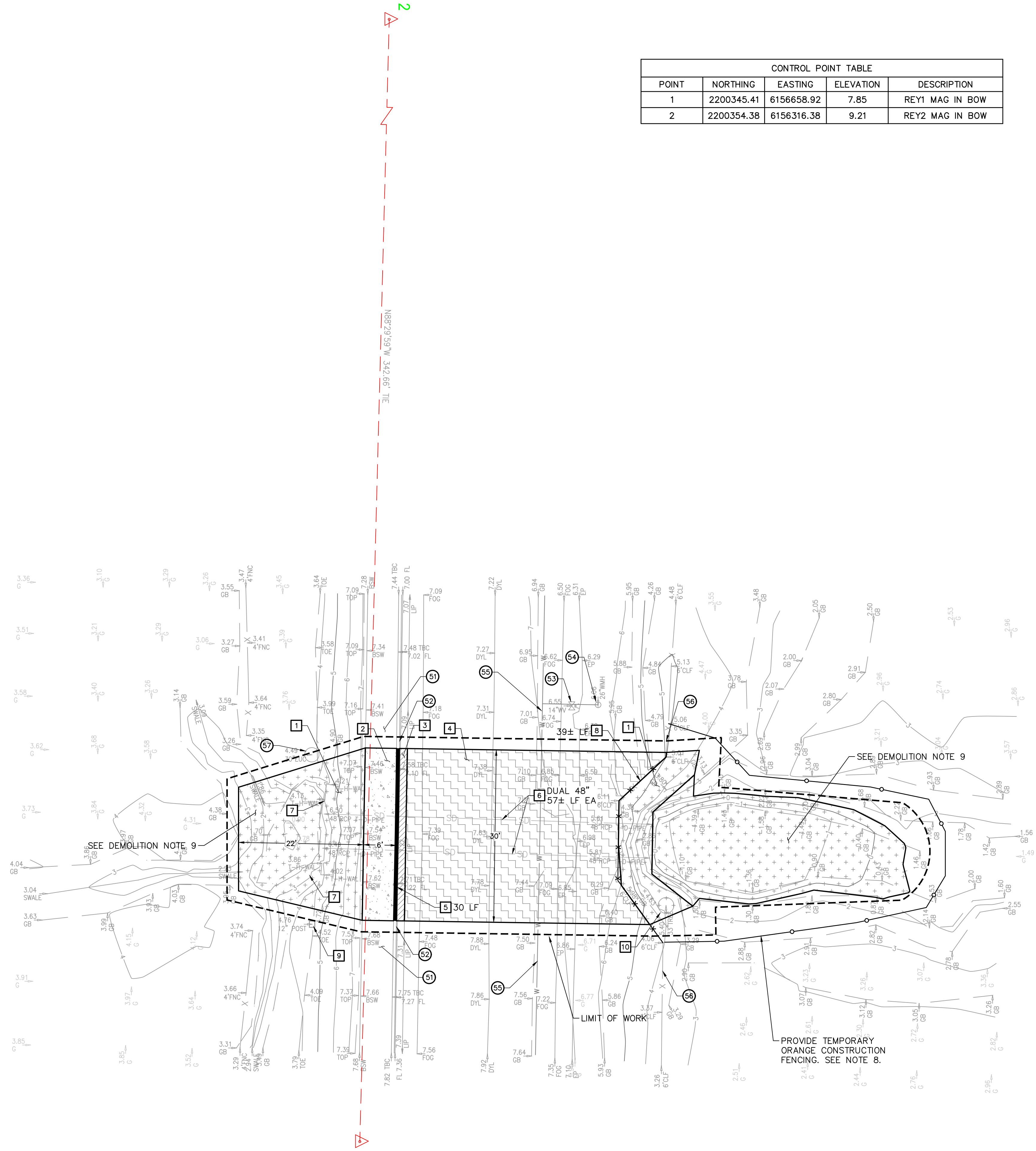
BY	DRAWN: SR
CHECKED: MM	
REVIEWED: JS	
DATE: 4/15/24	
SCALE: N/A	

DATE	REV	DESCRIPTION

SHEET: 1 OF 6

SHEET NO. TS-01

CONTROL POINT TABLE				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	2200345.41	6156658.92	7.85	REY1 MAG IN BOW
2	2200354.38	6156316.38	9.21	REY2 MAG IN BOW



**PLAN VIEW**  
SCALE: 1" = 10'

**DEMOLITION NOTES**

- CONTRACTOR TO USE CAUTION WHEN WORKING ADJACENT TO EXISTING BUILDING.
- RIM ELEVATIONS FOR EXISTING UTILITY STRUCTURES SHALL BE RAISED TO PROPOSED SURFACE ELEVATIONS.
- THE UTILITY LINES AND STRUCTURES SHOWN ON THESE PLANS ARE DERIVED FROM RECORD DATA AND/OR SURFACE OBSERVATION AND ARE APPROXIMATE ONLY. ACTUAL LOCATION AND SIZE, TOGETHER WITH THE PRESENCE OF ANY ADDITIONAL UTILITY LINES AND STRUCTURES NOT SHOWN ON THIS PLAN, SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS IN THE FIELD AND INFORMATION SHOWN ON THESE PLANS.
- THE CONTRACTOR IS REQUIRED BY STATE LAW TO ACTIVELY RESEARCH THE WORK AREA PRIOR TO COMMENCEMENT OF CONSTRUCTION, REFERENCE ANY MONUMENTS, AND REPLACE THOSE DAMAGED OR REMOVED DURING CONSTRUCTION.
- THE LIMITS OF DEMOLITION SHOWN ARE APPROXIMATE ONLY. CONTRACTOR IS RESPONSIBLE FOR MATCHING EXISTING SURROUNDINGS, LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, CURBS, GUTTERS, AND SIDEWALKS AND AVOIDING ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPES OR HAZARDOUS CONDITIONS.
- EXISTING CURB AND SIDEWALK AND LANDSCAPE/IRRIGATION WITHIN THE PROJECT LIMITS THAT ARE DAMAGED OR DISPLACED, EVEN THOUGH THEY WERE NOT TO BE REMOVED, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- PROTECT ALL EXISTING UTILITIES AND SITE FEATURES FROM BEING DAMAGED, UNLESS OTHERWISE NOTED. ALL UTILITIES AND IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED AT NO ADDITIONAL COST TO THE OWNER AND TO THE SATISFACTION OF THE ENGINEER.
- CONTRACTOR TO NOT WORK BEYOND TEMPORARY CONSTRUCTION FENCING.
- IF ANY CULTURAL FEATURES OR ARCHAEOLOGICAL MATERIALS ARE UNCOVERED DURING GRADING, TRENCHING, OR OTHER EXCAVATION WORK, ALL WORK WITHIN 100 FEET OF THESE MATERIALS SHALL BE STOPPED UNTIL A PROFESSIONAL ARCHAEOLOGIST CERTIFIED BY THE SOCIETY OF PROFESSIONAL ARCHAEOLOGY (SOPA) AND/OR THE SOCIETY OF CALIFORNIA ARCHAEOLOGY (SCA) HAS HAD ANY OPPORTUNITY TO EVALUATE THE SIGNIFICANCE OF THE FINDINGS. APPROPRIATE MITIGATION MEASURES ARE DETERMINED AND IMPLEMENTED.
- CONTRACTOR TO REPLACE CONCRETE S/W UP TO NEXT JOINT SCORELINE.
- CONTRACTOR TO COORDINATE WITH THE CITY OF PITTSBURG PUBLIC WORKS DEPARTMENT.

**BASIS OF BEARINGS**

THE BASIS OF THIS SURVEY IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) (NA2011), ZONE 3, EPOCH 2021.50.

**BENCHMARK**

THE ELEVATIONS SHOWN HEREON ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

**NOTES**

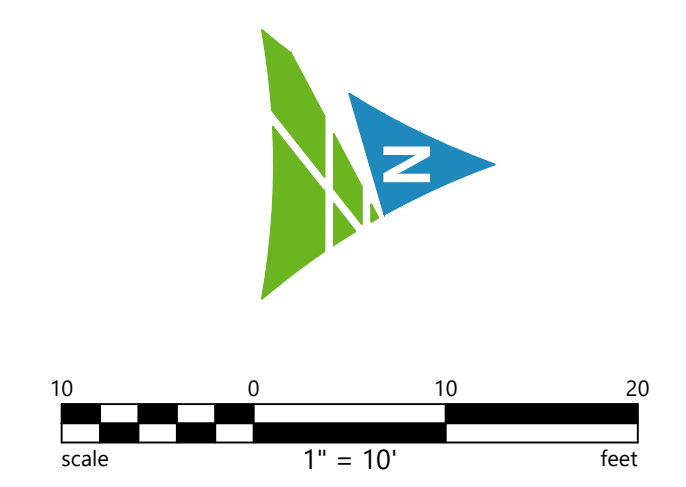
- BASED ON A FIELD SURVEY PERFORMED IN FEBRUARY 2024.
- ALL UNITS ARE IN FEET AND DECIMALS THEREOF.
- SURFACE CONTOURS ARE SHOWN IN 1 FOOT CONTOUR INTERVALS.

**DEMOLITION ITEMS**

- |    |   |  |
|----|---|--|
| 1  | CLEAR AND GRUB                            |  |
| 2  | REMOVE EX CONCRETE SECTION<br>SEE NOTE 10 |  |
| 3  | REMOVE EX CONCRETE GUTTER                 |  |
| 4  | REMOVE EX ASPHALT SECTION                 |  |
| 5  | REMOVE CURB                               |  |
| 6  | REMOVE EX 48" STORM DRAIN LINE            |  |
| 7  | REMOVE EX HEADWALL                        |  |
| 8  | REMOVE EX FENCE                           |  |
| 9  | REMOVE AND DISPOSE EX POST                |  |
| 10 | REMOVE EX TREE<br>SEE NOTE 11             |  |

**PROTECTION ITEMS**

- |    |                        |
|----|------------------------|
| 51 | PROTECT EX CONCRETE    |
| 52 | PROTECT EX CURB        |
| 53 | PROTECT EX WATER VALVE |
| 54 | PROTECT EX WATER METER |
| 55 | PROTECT EX WATER LINE  |
| 56 | PROTECT EX FENCE       |
| 57 | PROTECT EX TREE        |



DATE	REV	DESCRIPTION	BY	DRAWN: SR	CHECKED: MM	REVIEWED: JS	DATE: 4/15/24	SCALE: N/A

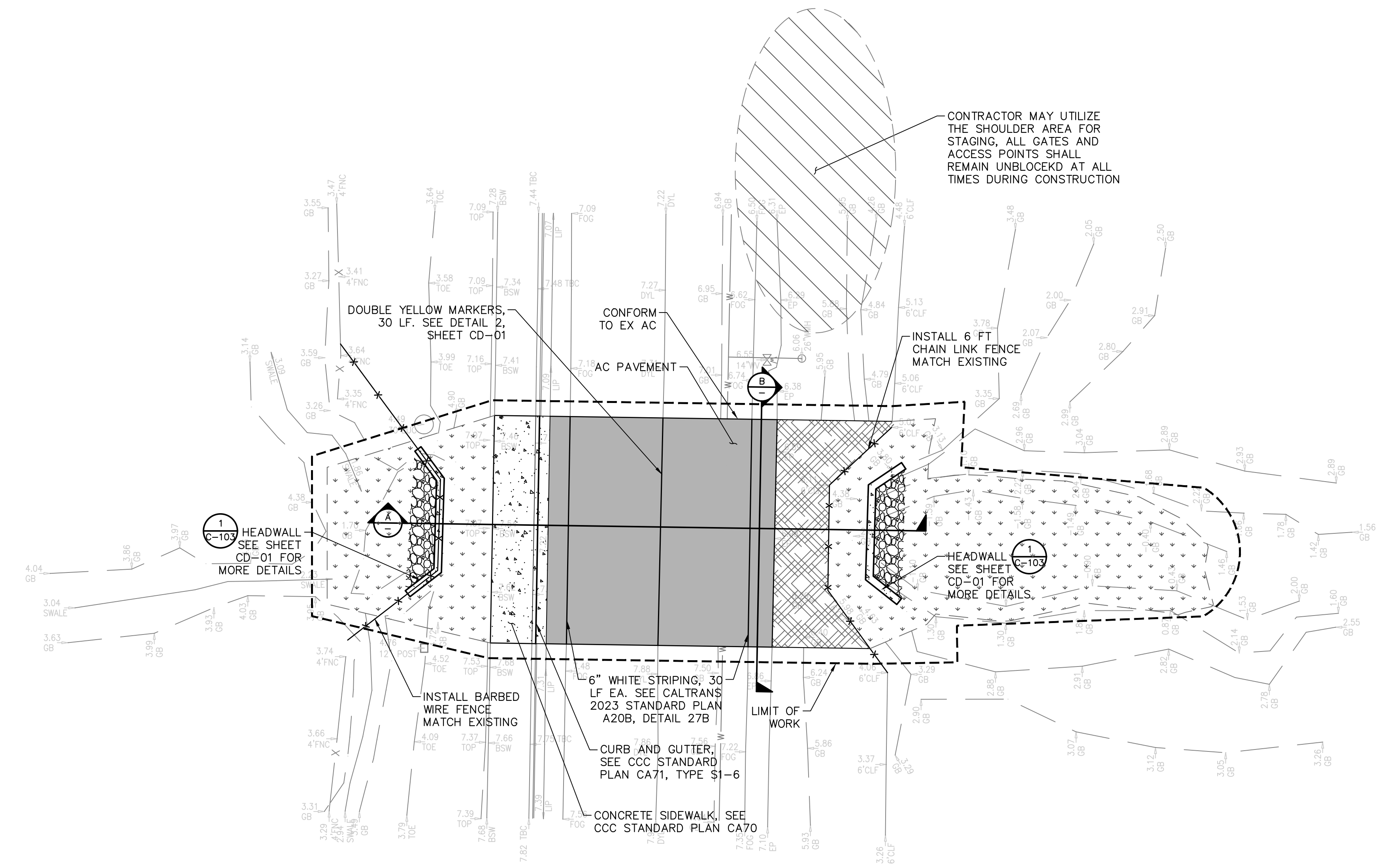
SHEET: 2 OF 6

SHEET NO. **EX-01**

BY	DATE	REV	DESCRIPTION

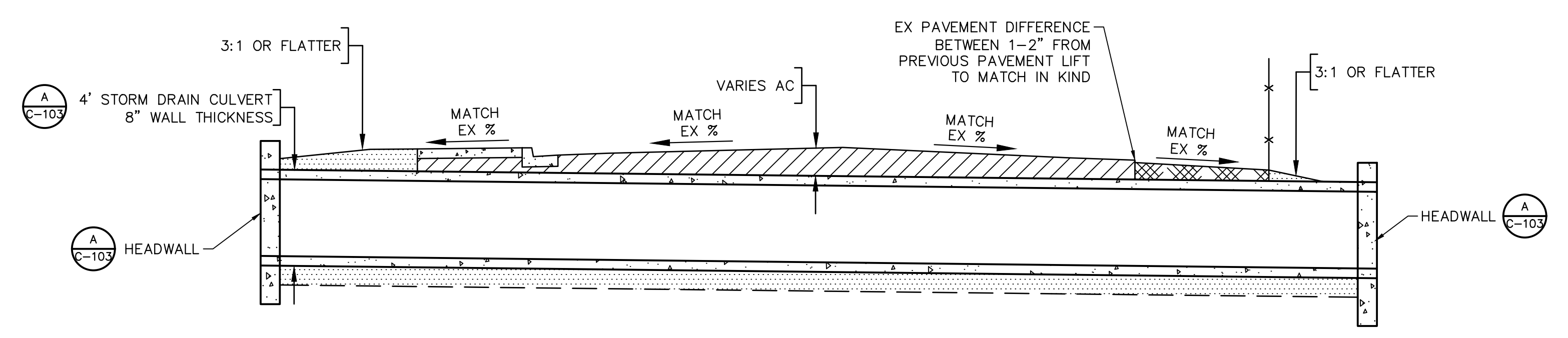
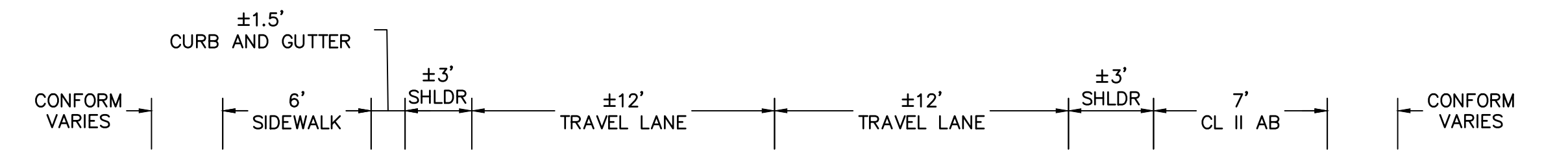
DRAWN: SR	CHECKED: MM	REVIEWED: JS	DATE: 4/15/24	SCALE: N/A
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SHEET:	3 OF 6
SHEET NO.	IM-01

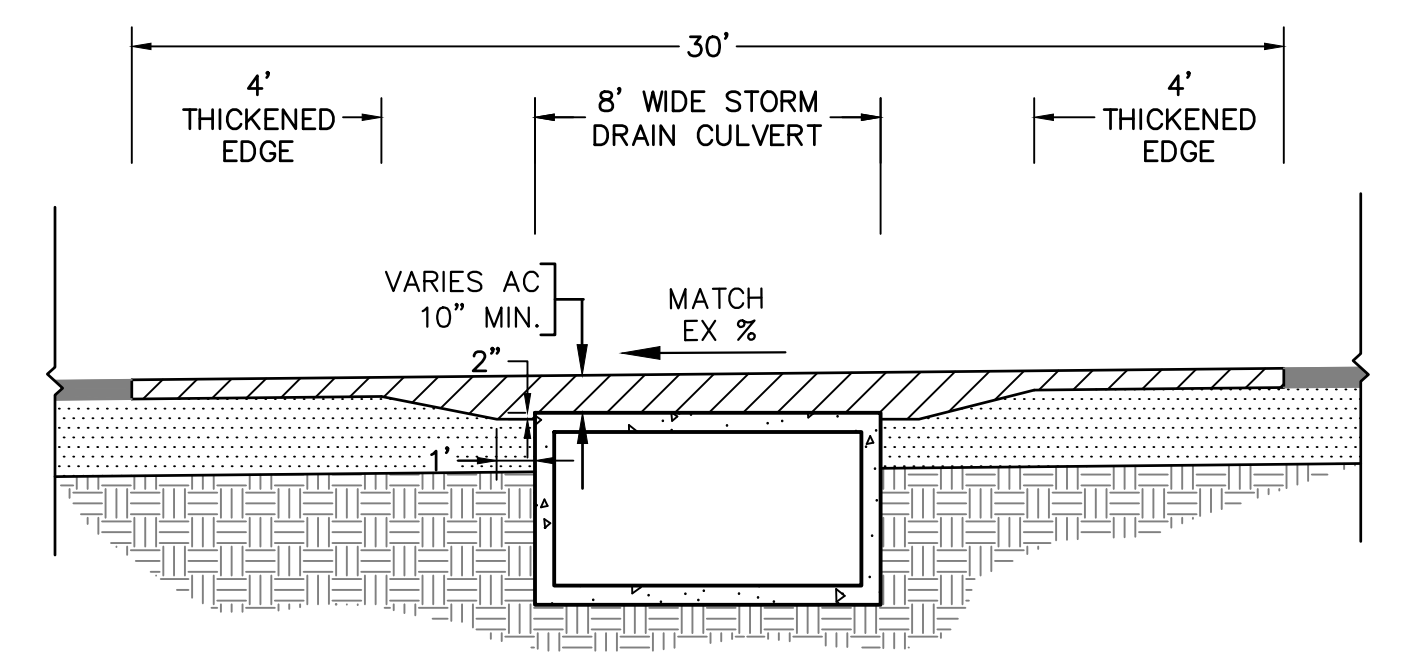


HYDROSEED			
ITEM	MATERIAL	MATERIAL TYPE	APPLICATION RATE
HYDROSEED	SEED	MIX	23 LB/ACRE
	FIBER	WOOD	2,000 LB/ACRE
	TACKIFIER	PSYLLIUM	150 LB/ACRE

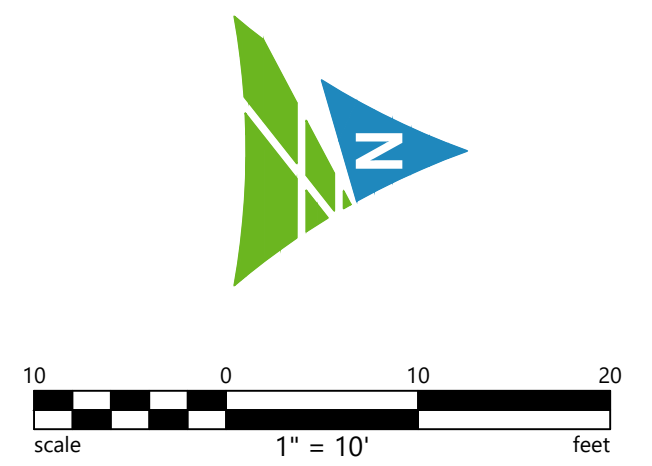
**PLAN VIEW**  
SCALE: 1" = 10'



**SECTION A**  
SCALE: 1" = 5'

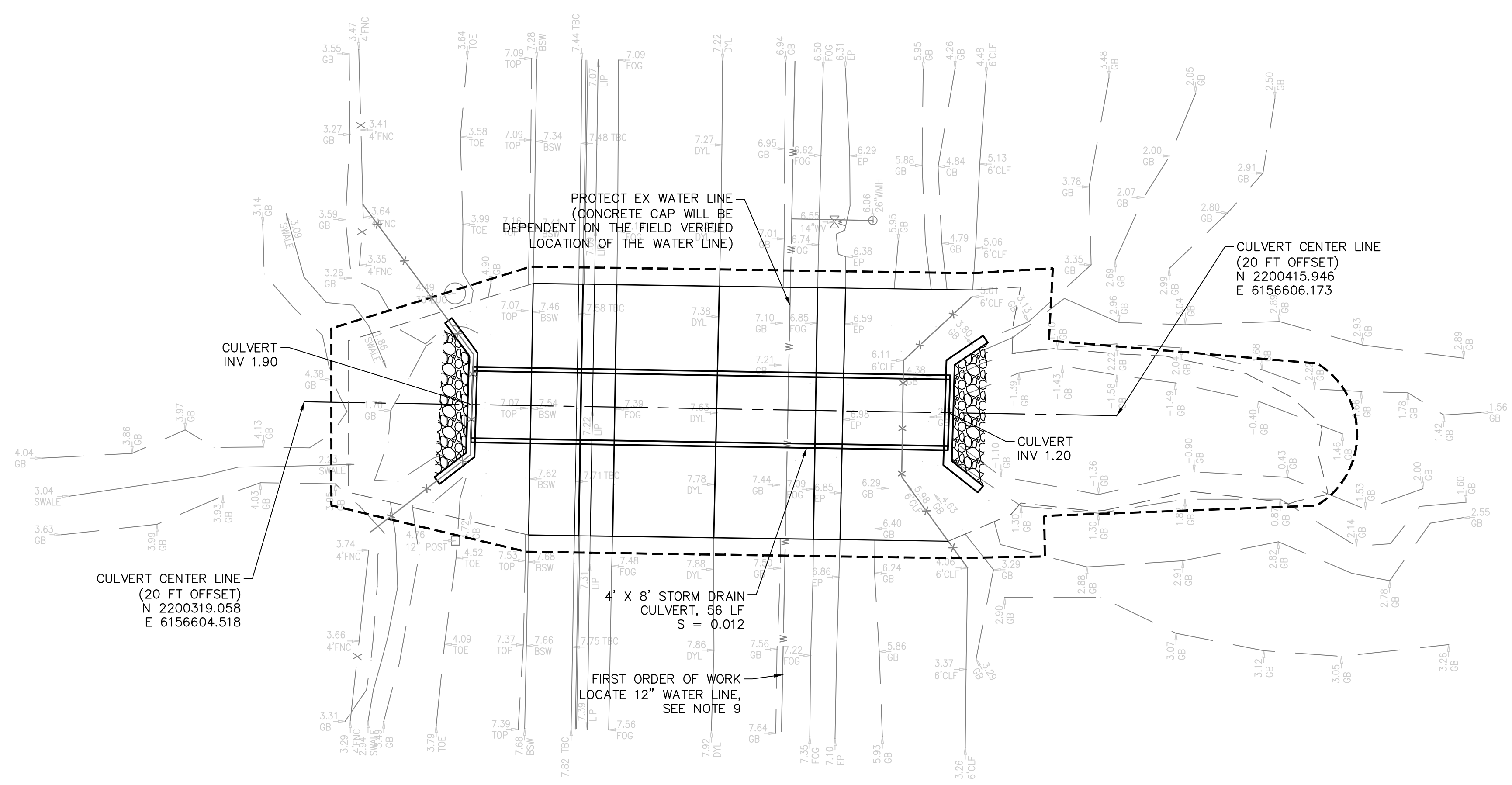


**SECTION B**  
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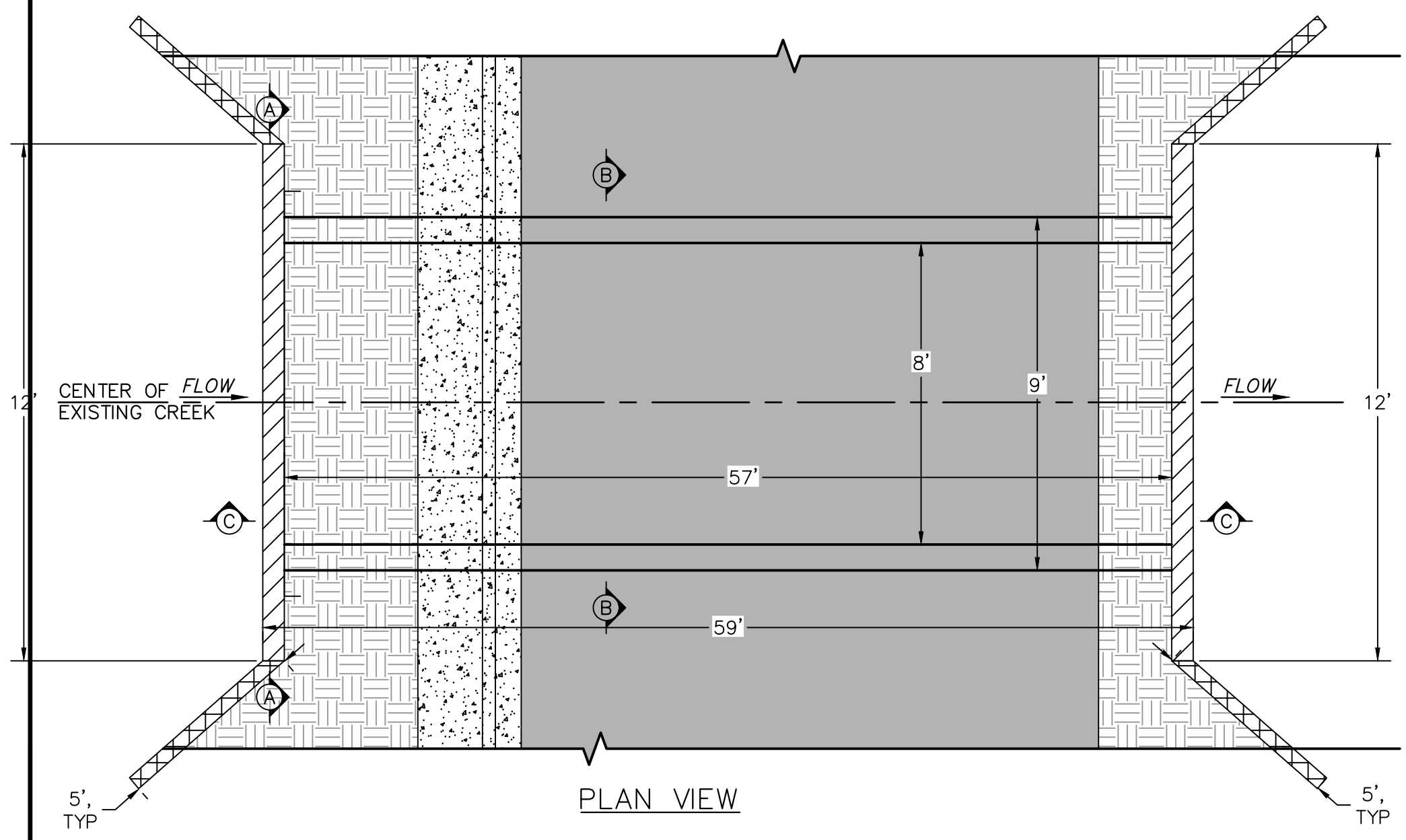


**UTILITY NOTES**

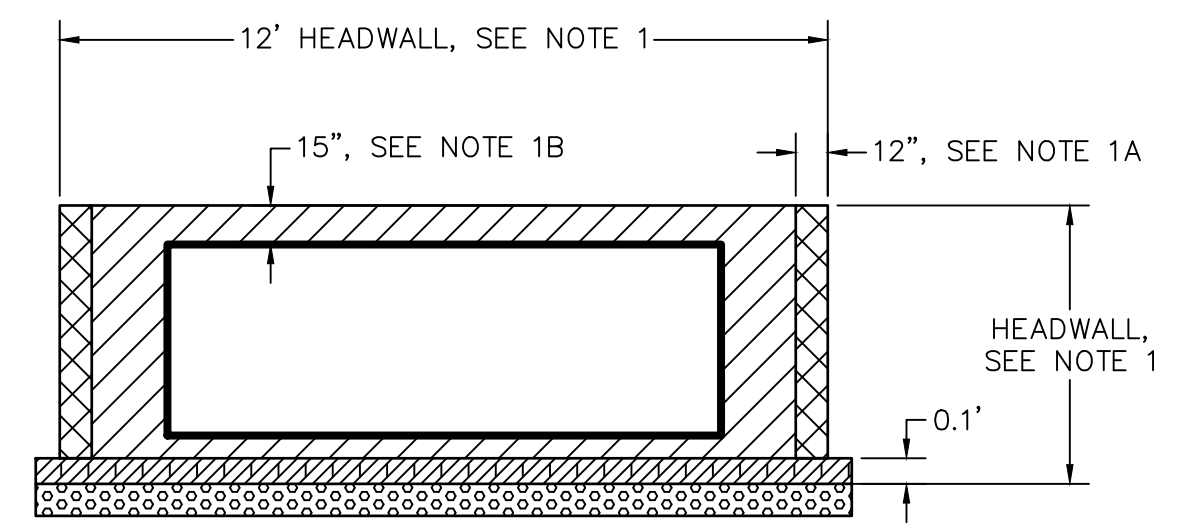
1. PROPOSED SITE PLAN HAS BEEN SCREENED FOR CLARITY.
2. RIM ELEVATIONS FOR EXISTING UTILITY STRUCTURES SHALL BE RAISED TO PROPOSED SURFACE ELEVATIONS. EXISTING STRUCTURES LOCATED WITHIN PROPOSED VEHICULAR ROADWAY, AN H-20 TRAFFIC-RATED TOP SHALL BE USED TO REPLACE THE EXISTING TOP OF THE ADJUSTED STRUCTURE.
3. PROTECT ALL EXISTING UTILITIES AND SITE FEATURES FROM BEING DAMAGED, UNLESS OTHERWISE NOTED. ALL UTILITIES AND IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED AT NO ADDITIONAL COST TO THE CITY AND TO THE SATISFACTION OF THE ENGINEER.
4. THE EXISTING UTILITY LINES AND STRUCTURES SHOWN ON THESE PLANS ARE DERIVED FROM RECORD DATA, UNDERGROUND UTILITY SURVEY AND/OR SURFACE OBSERVATION AND ARE APPROXIMATE ONLY. ACTUAL LOCATION AND SIZE, TOGETHER WITH THE PRESENCE OF ANY ADDITIONAL UTILITY LINES AND STRUCTURES NOT SHOWN ON THIS PLAN, SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CITY IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS IN THE FIELD AND INFORMATION SHOWN ON THESE PLANS.
5. EXISTING UNDERGROUND UTILITIES, INCLUDING THOSE MARKED UNKNOWN, ARE BASED ON SURVEY COMPLETED BY OTHERS AND PROVIDED TO BKF ENGINEERS FOR INCLUSION IN PLANS.
6. EXISTING PIPE LINES MAY HAVE CATHODIC PROTECTION. CONTRACTOR SHALL ENSURE THAT ALL CONNECTIONS TO EXISTING PIPE LINES ARE ELECTRICALLY COMMON WITH THE PIPE LINE.
7. CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION.
8. LENGTH OF PIPES ARE HORIZONTAL DISTANCES FROM CENTER TO CENTER OF STRUCTURES, ROUNDED TO THE NEAREST FOOT AND ARE SHOWN FOR ENGINEERING CALCULATIONS ONLY. CONTRACTOR SHALL ESTIMATE THEIR OWN PIPE LENGTHS PRIOR TO BIDDING.
9. THE CONTRACTOR SHALL PHYSICALLY LOCATE THE 12" WATER LINE WITHIN THE LIMITS OF WORK, AS A FIRST ORDER OF WORK, AND PROVIDE THE CITY WITH THE RESULTS 5 WORKING DAYS BEFORE COMMENCING ANY EXCAVATION.



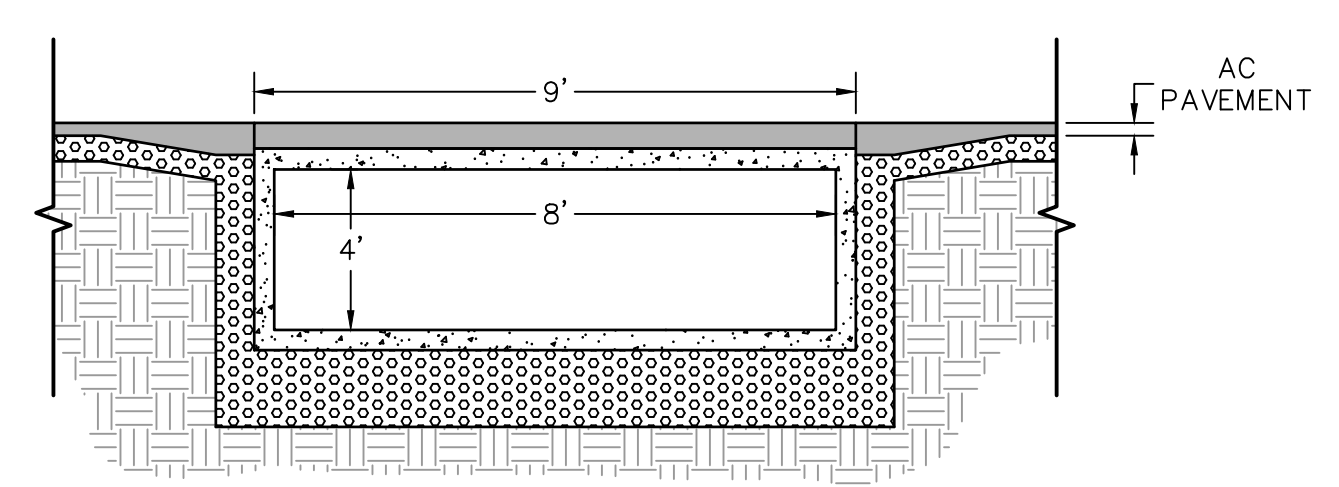
**PLAN VIEW**  
SCALE: 1" = 10'



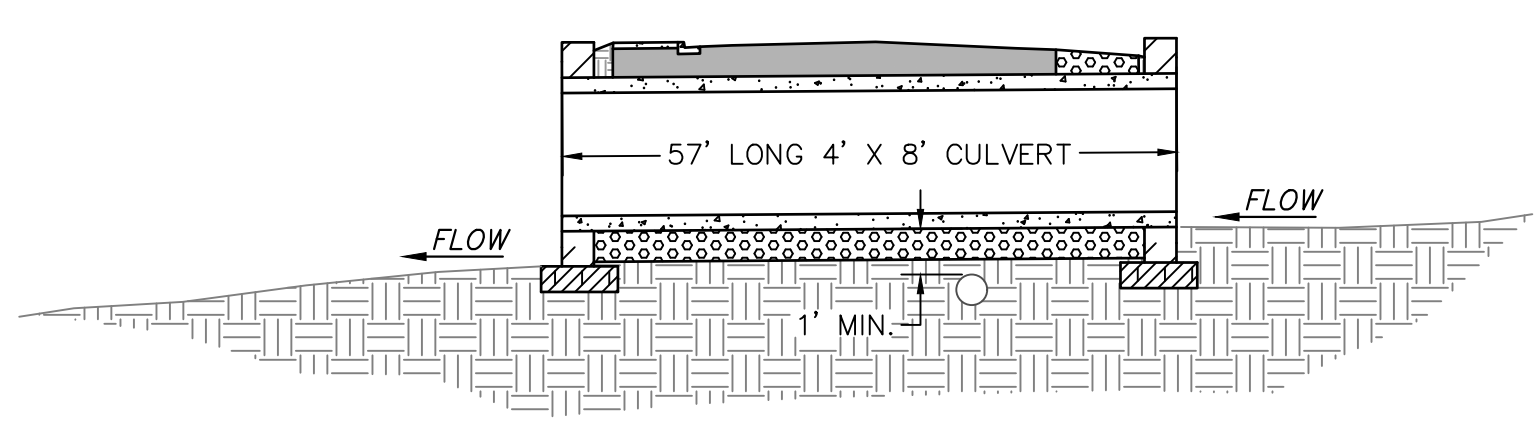
**PLAN VIEW**



**SECTION A**



**SECTION B**

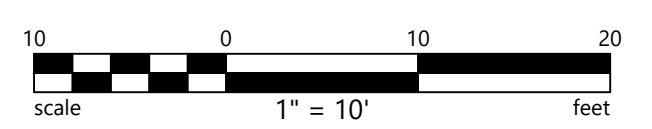


**SECTION C**

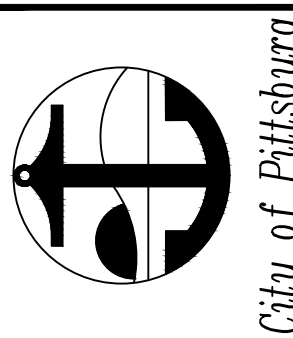
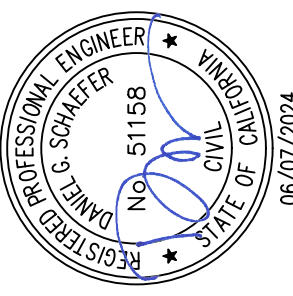
**DETAIL 1 - 4' X 8' CULVERT**  
NTS

**NOTES**

1. INSTALL HEADWALLS AND WINGWALLS PER COUNTY OF CONTRA COSTA STANDARD PLAN NO. CD52 FOR TYPE "M" HEADWALL STRUCTURE.
  - 1.A. HEADWALL AND WINGWALL THICKNESS SHALL ALL BE INCREASED TO TEN (10) INCHES.
  - 1.B. HEIGHT OF THE HEADWALL SHALL INCREASED TO FIFTEEN (15) INCHES ABOVE TOP OF CULVERT.
2. DURING INSTALL OF THE DUAL 48" INCH CULVERT, ATTACHED HEADWALLS AND WINGWALLS, CONTRACTOR SHALL INSTALL A WATER BYPASS SYSTEM TO BE DESIGNED AND APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORK. ALL NECESSARY EROSION CONTROL MEASURES MUST ALSO BE INSTALL PER THE PROJECT STORM WATER POLLUTION PREVENTION PLAN.



DATE	REV	DESCRIPTION	BY	DRAWN: SR	CHECKED: MM	REVIEWED: JS	DATE: 4/15/24	SCALE: N/A



WILLOW PASS ROAD STORM DRAIN REPAIR PROJECT  
PROJECT No. 3023

### GRADING PLAN

CITY OF PITTSBURG, CA

BY	DRAWN: SR
DESCRIPTION	CHECKED: MM
DATE	REVIEWED: JS
REV	DATE: 4/15/24
	SCALE: N/A

DATE	REV	DESCRIPTION

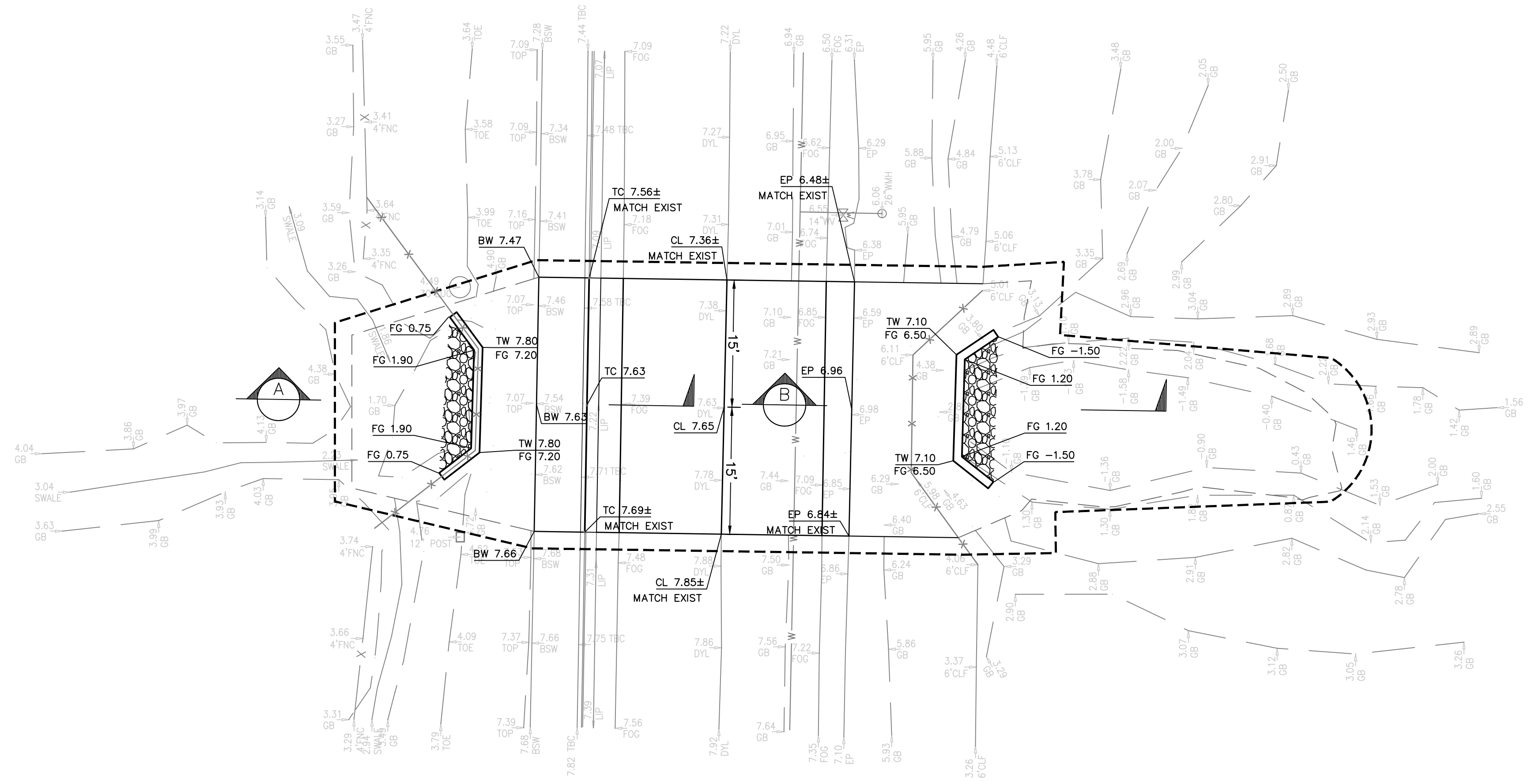
SHEET: 5 OF 6  
SHEET NO. GR-01

#### GRADING LEGEND

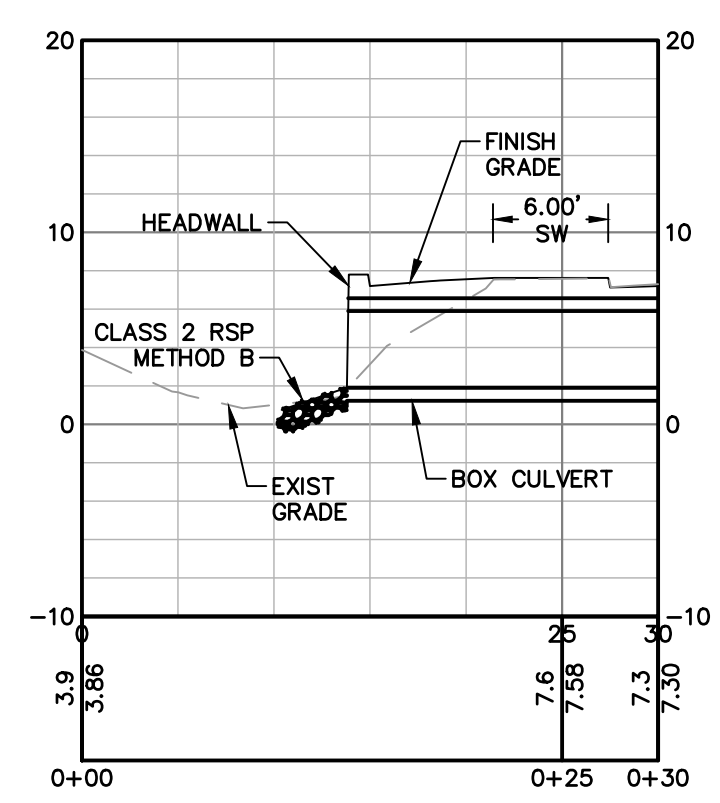
- 100— PROPOSED CONTOUR
- 99— EXISTING CONTOUR
- - - - GRADE BREAK
- FG XX.XX ELEVATION LABEL:
- BW BACK OF WALK
- CL CENTER LINE
- EP EDGE OF PAVEMENT
- FG FINISHED GRADE
- TC TOP OF CURB
- TW TOP OF WALL

#### GRADING NOTES

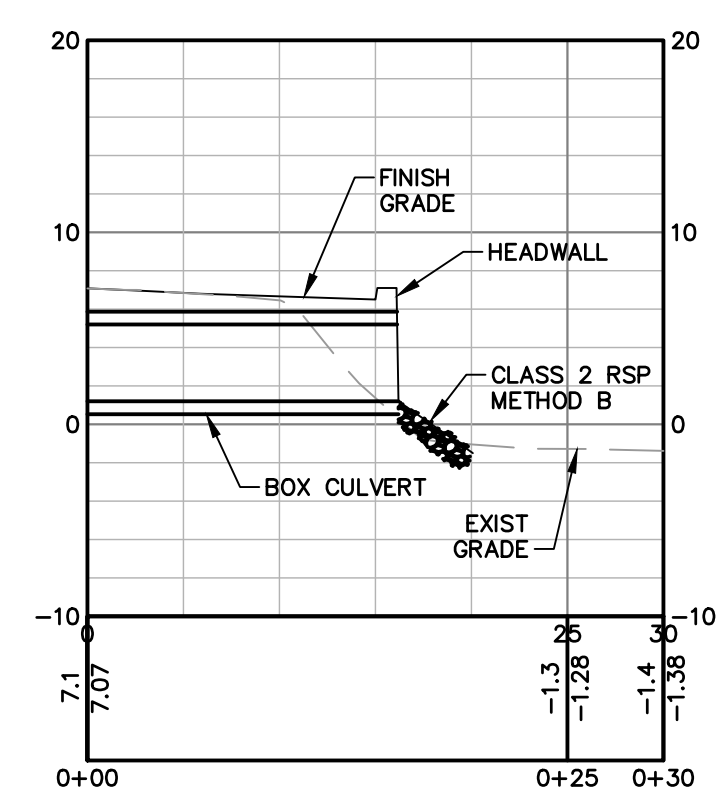
- PROPOSED SITE PLAN AND UTILITIES HAS BEEN SCREENED FOR CLARITY.
  - GRADING WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND THE REQUIREMENTS AND RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL REPORT.
  - THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO CONFORM TO THE LINES, GRADES, SECTIONS, AND DIMENSIONS AS SET FORTH ON THESE PLANS. GRADED AREAS SHALL CONFORM TO THE VERTICAL ELEVATIONS SHOWN WITHIN TOLERANCE OF ONE-TENTH OF A FOOT IN LANDSCAPED AREAS AND TWO-HUNDREDTHS OF A FOOT IN HARDSCAPED OR PAVED AREAS. WHERE GRADED AREAS DO NOT CONFORM TO THESE TOLERANCES, THE CONTRACTOR SHALL BE REQUIRED TO DO CORRECTIVE GRADING, AT NO EXTRA COST TO THE OWNER.
  - CONTRACTOR SHALL FIELD VERIFY FINISHED GRADE ELEVATIONS PRIOR TO STARTING CONSTRUCTION.
  - CONTRACTOR SHALL TAKE CAUTION WHEN GRADING ADJACENT TO EXISTING FEATURES.
  - RIMS OF UTILITY STRUCTURES SHALL BE ADJUSTED TO FINISHED GRADE IN AREAS OF RE-GRADING. IN PAVED AREAS, ELEVATION DIFFERENCE SHALL NOT BE MORE THAN 1/4 INCH BETWEEN RIMS AND ADJACENT SURFACE.
  - WHERE IMPROVEMENTS INVOLVE ADA ACCESSIBILITY, CONTRACTOR'S ATTENTION IS DIRECTED TO THE FOLLOWING PARAMETERS THAT NEED TO BE MET WITH THE FINISHED CONSTRUCTION:
    - WALKWAYS SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 4.9% AND A MAXIMUM CROSS SLOPE OF 2%.
    - LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ALL DIRECTIONS, INCLUDING DIAGONAL.
    - TRANSITIONS BETWEEN PROPOSED IMPROVEMENTS AND EXISTING CONDITIONS SHALL BE SMOOTH AND FREE OF ABRUPT CHANGES.
- \* CONTRACTOR SHALL FIELD VERIFY EXISTING GRADES AT CONFORMS PRIOR TO FORMING/AC WORK.



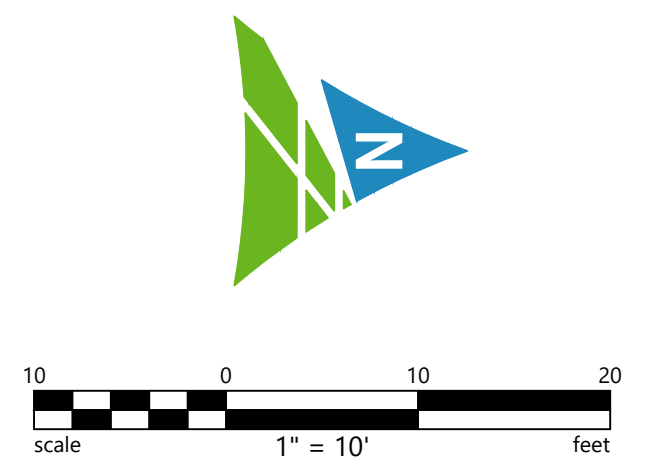
**PLAN VIEW**  
SCALE: 1" = 10'

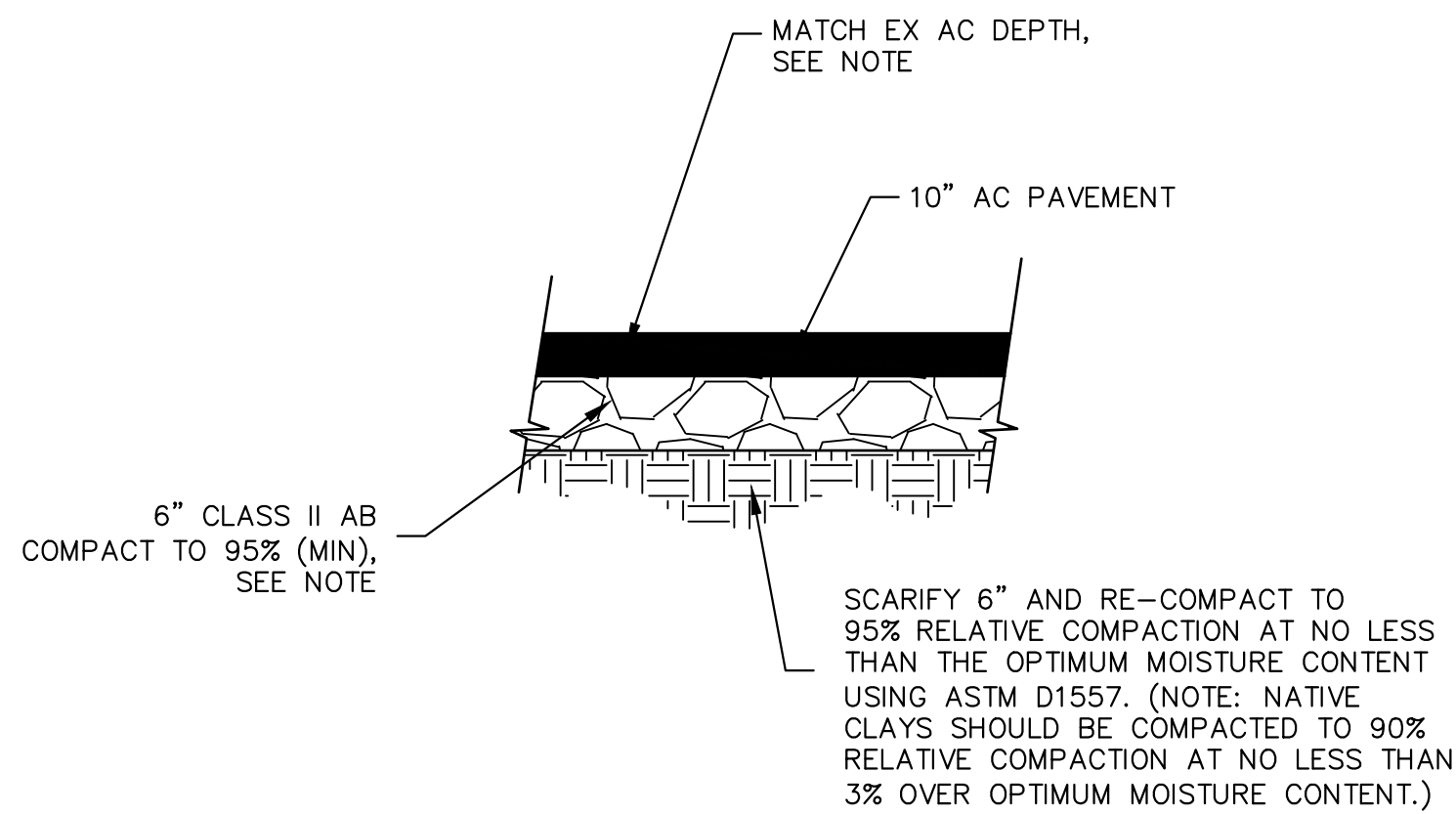


**Sec-A**  
H: 1"=10'  
V: 1"=10'



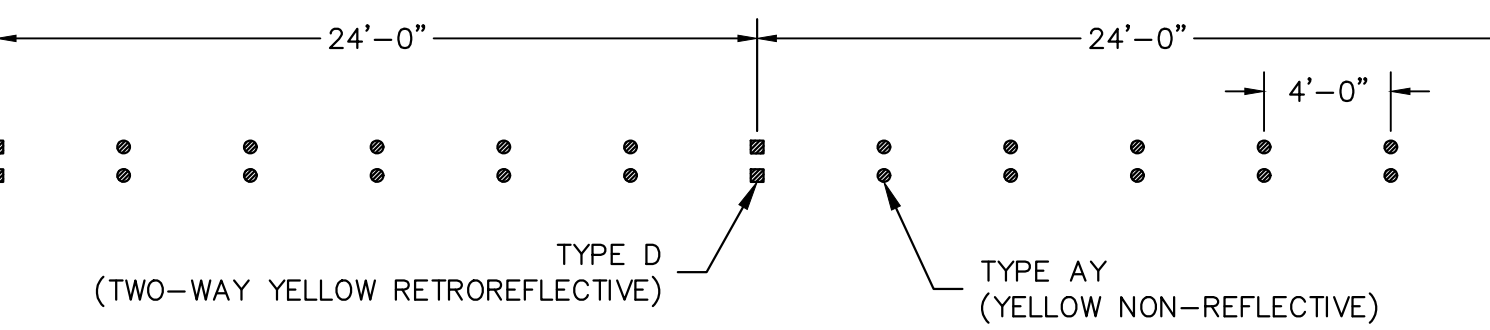
**Sec-B**  
H: 1"=10'  
V: 1"=10'



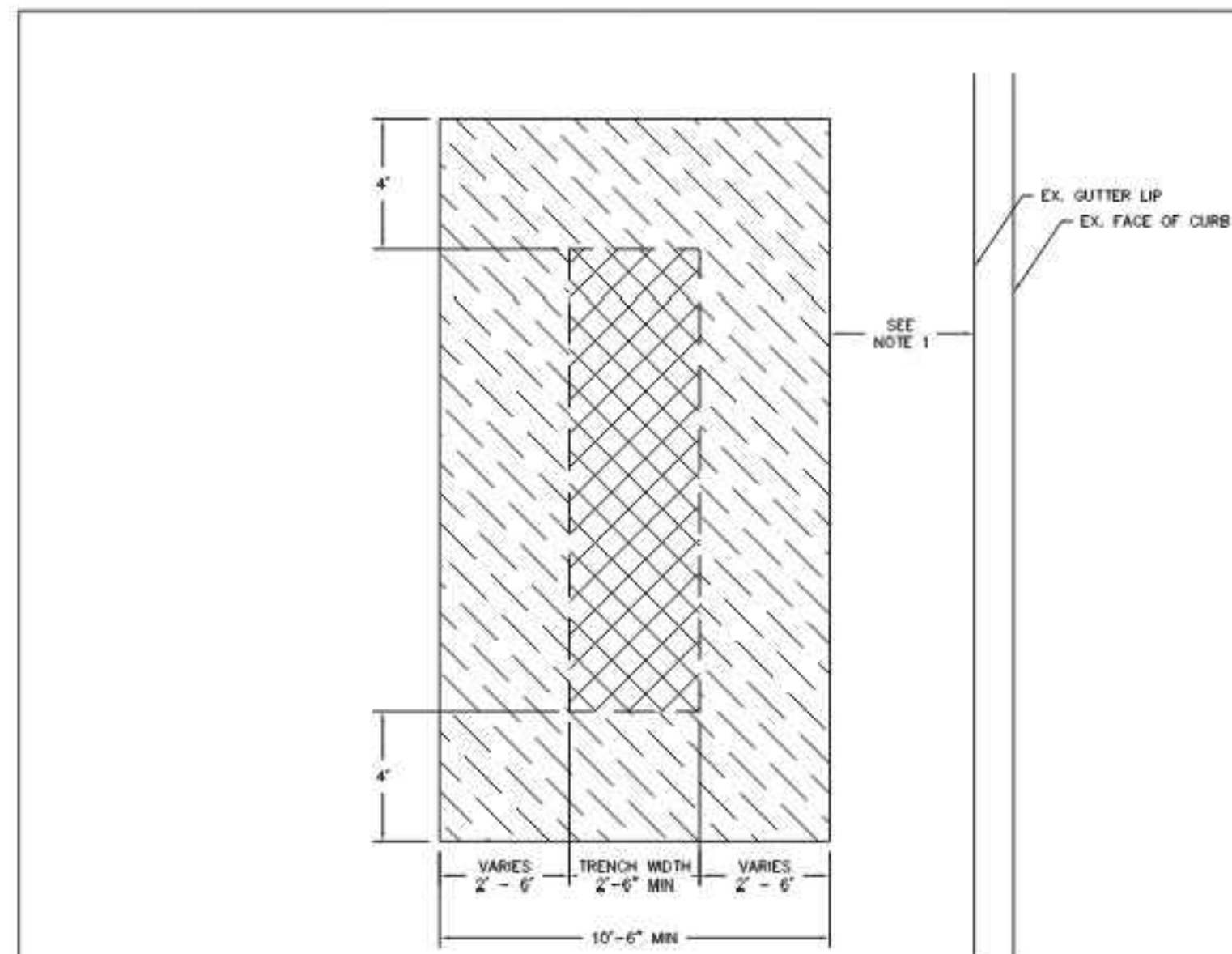


NOTE: AC PAVEMENT THICKNESS VARIES BEYOND LIMITS OF CULVERT, SEE IMPROVEMENT PLANS FOR VARYING PAVEMENT SECTIONS.

1 AC PAVEMENT NOT TO SCALE



2 PAVEMENT MARKERS NOT TO SCALE



PLAN VIEW SCALE: NTS

NOTES:  
1. EXISTING AC PAVEMENT ADJACENT TO T-CUT SHALL BE AT LEAST 3' WIDE. IF WIDTH OF ADJACENT EXISTING AC PAVEMENT IS LESS THAN LEAST 3', THE SECTION OF EXISTING AC PAVEMENT SHALL BE REMOVED AND REPLACED, OR AS DIRECTED BY ENGINEER.

APPROVED: [Signature] 3/8/23

NO.	DATE	REVISION	DRAWN BY:	FY	STANDARD DETAIL	SHEET 2 OF 8	DATE
1	2005-01-11	LOAN FROM TRENCH					
2	2019-01-11	NOTE 1					

CITY OF PITTSBURG

STANDARD SIDEWALK DETAILS  
CA70

NOTES:  
1. Minor Concrete, not less than 505 lbs cementitious material per cubic yard. If maximum aggregate shall be used for construction detailed on this plan. Minor concrete shall comply with Section 90 of the California Department of Transportation Standard Specifications. New curbs and adjoining sidewalk shall be constructed monolithically.  
2. Transverse scoremarks shall be made at 10' intervals on the sidewalk and a longitudinal scoremark shall be made along the centerline of any sidewalk which is 8' or more in width. Weakened plane joints shall be provided at 10' intervals (staggered with scoremarks) in curb and sidewalk. See Standard Plan CA72 for scoremark and weakened plane joint layouts through driveways, and Standard Plan CA75 for scoremarks, weakened plane and expansion joint locations for curb ramps.  
3. Curb reference stakes shall not be offset more than 3' from the back of curb or more than 2' from the back of the sidewalk.  
4. Where there is a paver strip between the sidewalk and the curb, the curb in a driveway depression shall be constructed monolithically with the driveway.  
5. When the street slopes away from the curb, the gutter slope shall match the cross slope of the street.  
6. Paving at the gutter lip shall conform to Detail A, except when the street slopes away from the curb and at the bottom of curb ramps, the paving shall match the gutter lip.  
7. Meter boxes, poles, and fire hydrant locations shall conform to locations shown on Standard Plan C600.  
8. Minimum sidewalk width, measured from face of curb, are 5'-0" for residential; 6'-0" for multiple zoned 10'-0" for retail business and commercial areas; 8'-0" in retail and commercial areas where right of way is limited.  
9. A 3" layer of Class 2 aggregate base shall be placed under all curb and sidewalk sections unless otherwise noted.  
10. Expansion joint Detail C shall be installed at or near BC and EC per Standard Plan CA75 and the back of sidewalk at driveways. Premolded joint filler material for expansion joints shall conform to Section 51-1.12C "Premolded Expansion Fillers," of the California Department of Transportation Standard Specifications.  
11. See Standard Plan CA71 for curb details.  
12. 35' is the minimum offset on low volume, low speed residential streets. For higher volume, higher speed roads, the 35' dimension shall increase to comply with Topic 405 "Intersection Design Standards," Subsection 405.1 "Sight Distance" of the California Department of Transportation Highway Design Manual.  
13. All sidewalk made curb returns shall be 4" minimum thickness from BC to EC.  
14. For curb ramp details, see appropriate Caltrans standard plans as specified on the project plans.

COUNTY OF CONTRA COSTA PUBLIC WORKS DEPARTMENT  
STANDARD PLAN  
SCALE: NO SCALE DATE: 3/14  
DRAWN BY: H. MUSSEY PLAN NO.: CA70  
CHECKED BY: M. HOLMGREN

STANDARD MEDIAN, CURB AND HMA DIKE DETAILS  
CA71

NOTES:  
1. Minor Concrete in conformance with Section 90-2, "Minor Concrete" of the California Department of Transportation's Standard Specifications containing no less than 505 lb per cubic yard of cementitious material shall be used for all concrete construction detailed on this plan.  
2. Weakened plane joints shall be provided at 10' intervals on all curbs. See Standard Plan CA70, "Detail B".  
3. All new curbs where it conforms to existing facilities shall be dovetailed as per Standard Plan CA71.  
4. When the street slopes away from the curb, the gutter slope shall match the cross slope of the street.  
5. Paving at the gutter lip shall conform to Standard Plan CA70 Detail A, except that where the street slopes away from the curb, the paving shall match the gutter lip.  
6. Curb may be constructed monolithically with the median paving, in which case a weakened plane joint conforming to Standard Plan CA70 Detail B shall be provided along the back of the curb.  
7. Type M3 curb shall be used only when placed on existing or overlaid pavement.  
8. A 3" minimum compacted layer of Class 2 aggregate base or subbase shall be placed under Type M1 curb, unless noted otherwise on the plans.  
9. Place dowels in 1" diameter drilled hole filled with 1:1 sand/grout. Dowels when curb is extruded.  
10. Reinforcement shall be #4 bars @ 18" OC every way or 6" x 6", 8" x 6", 10 gage welded wire fabric.  
11. Median paving may be "textured" as approved by the Public Works Department.  
12. Width of HMA path shall be a minimum of 4'-6" measured from top face of curb or dike.

COUNTY OF CONTRA COSTA PUBLIC WORKS DEPARTMENT  
STANDARD PLAN  
SCALE: NO SCALE DATE: 3/14  
DRAWN BY: H. MUSSEY PLAN NO.: CA71  
CHECKED BY: M. HOLMGREN

TYPE "M" HEADWALL STRUCTURE DETAILS  
CD52

GENERAL NOTES:  
USE:  
This headwall can be used in a variety of locations: channel outlet, basin outlet/inlet, and side channel outlet. This standard plan does not address the various facets unique to its planned use, e.g. these items shall be included in the specific project construction plans approved by the Public Works Department.  
Items to address include, but are not limited to:  
• Safety pipe rolling details for basin inlets and outlets or chain link rolling details for channel inlets and outlets. The rollings placed above the pipe shall be galed to allow maintenance access unless otherwise directed by the Public Works Department.  
• Flap gate details, if required.  
• Trash rack details, if required by the Public Works Department.  
• Adjacent rock slope protection (RSP) layout, type and dimensions.  
• Pipe flowline orientation dimensions "H" and "L" invert, slope and top of wall elevation.  
• Finish grades behind walls. (A level area above the headwall may be required by the Public Works Department to service trash racks or flap gates.)  
• Optional outlet sill design.

PLAN NOTES:  
1. Unit Stresses:  $f_c$  = 24,000 psi,  $f_s$  = 36,000 psi.  
2. Walls designed for 2' live load surcharge, 1.5:1 sloping surcharge not to exceed 2' in elevation plus 2' live load surcharge, or unlimited 2:1 surcharge.  
3. Dimensions "H" and "L" are shown on the project or construction plans.  
4. Wall height may be exceeded by 6" before going to next greater "H".  
5. "D" maximum = 72", "D" minimum = 18".  
6. 6" x 12" minimum for basin or creek dike structures unless otherwise approved by the Public Works Department. For basin outlet structure, pipe flowline shall be depressed to match structure invert elevation.  
7. See California Department of Transportation's Standard Plan BD-3, for weepholes and pervious backfill details. Weepholes centered either side of pipe, back wall only.

COUNTY OF CONTRA COSTA PUBLIC WORKS DEPARTMENT  
STANDARD PLAN  
SCALE: NO SCALE DATE: 3/14  
DRAWN BY: P. WARREN PLAN NO.: CD52  
CHECKED BY: M. HOLMGREN