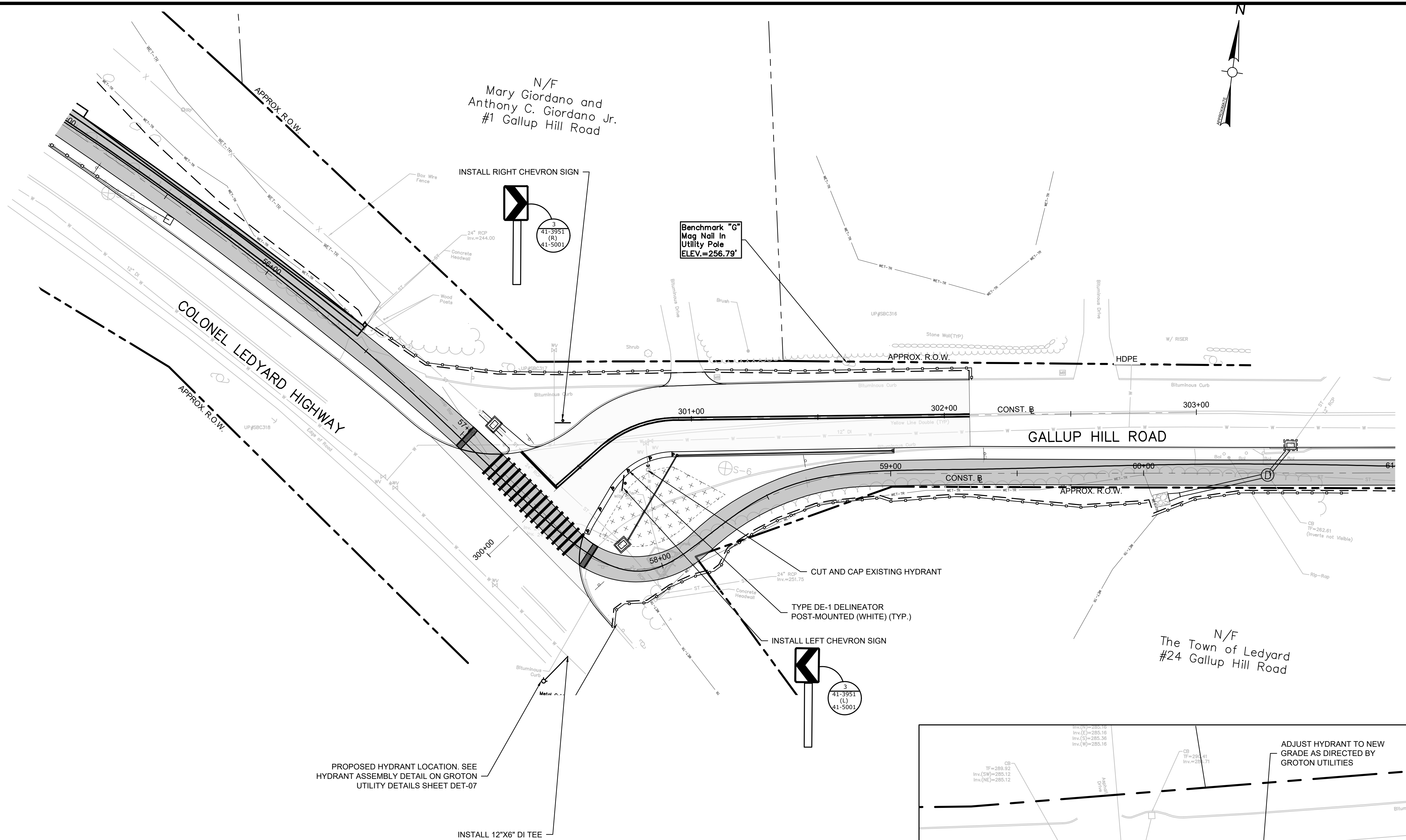
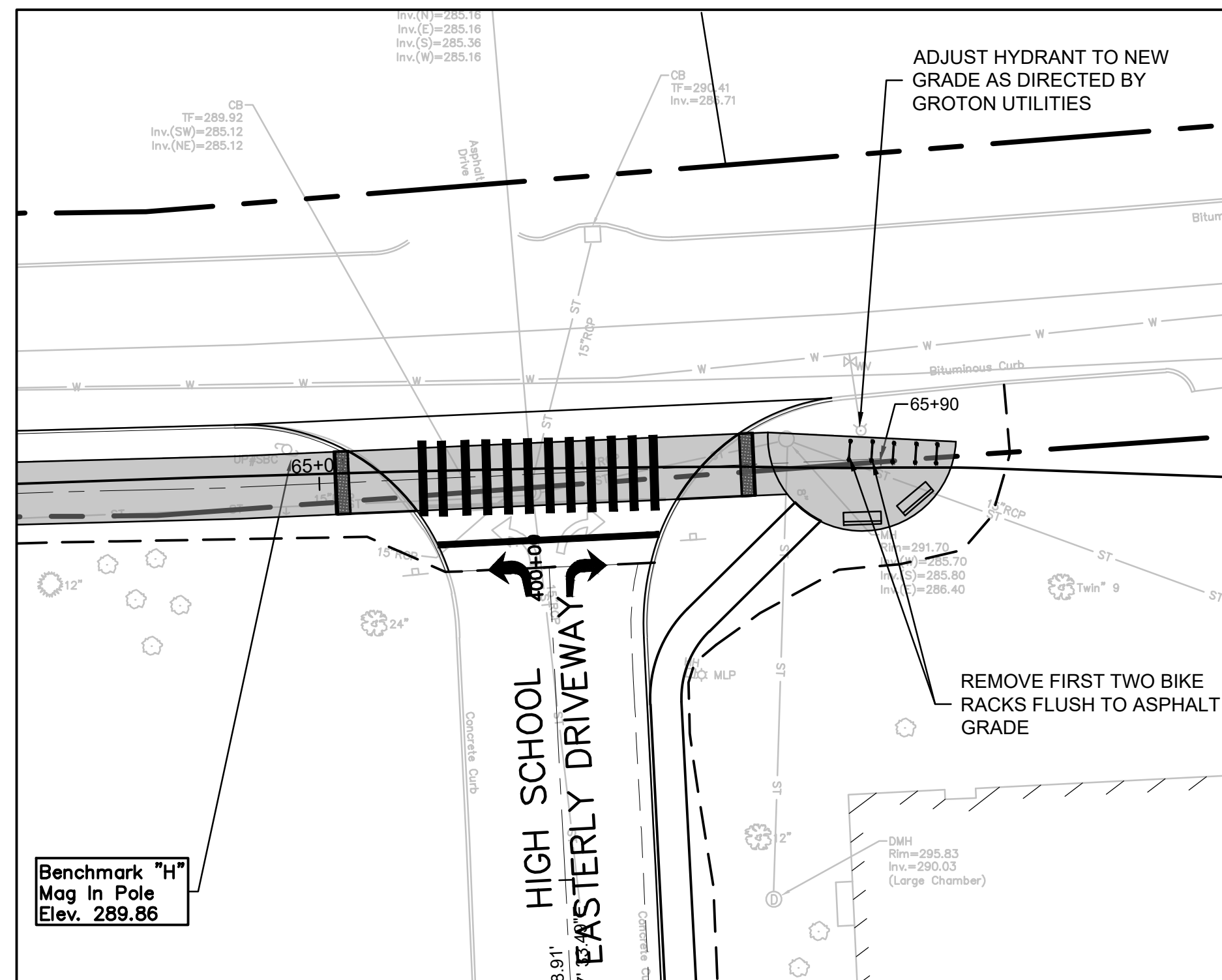



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- NOTES:
- SEE CT DOT TRAFFIC GUIDE SHEET (DET-18) FOR INFORMATION ON DELINEATORS
 - CONTRACTOR TO COORDINATE WITH GROTON UTILITIES AND THE TOWN OF LEDYARD FOR HYDRANT RELOCATION



Project:
TOWN OF LEDYARD, CT



LEDYARD HIGH SCHOOL
MULTI-USE PATHWAY &
SIDEWALK EXTENSION
L071-0001

741 COLONEL LEDYARD HIGHWAY
LEDYARD, CT 06339

Weston & Sampson

Weston & Sampson Engineers, Inc.
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Rocky Hill, CT 06067
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Consultants:

Revisions:		
No.	Date	Description

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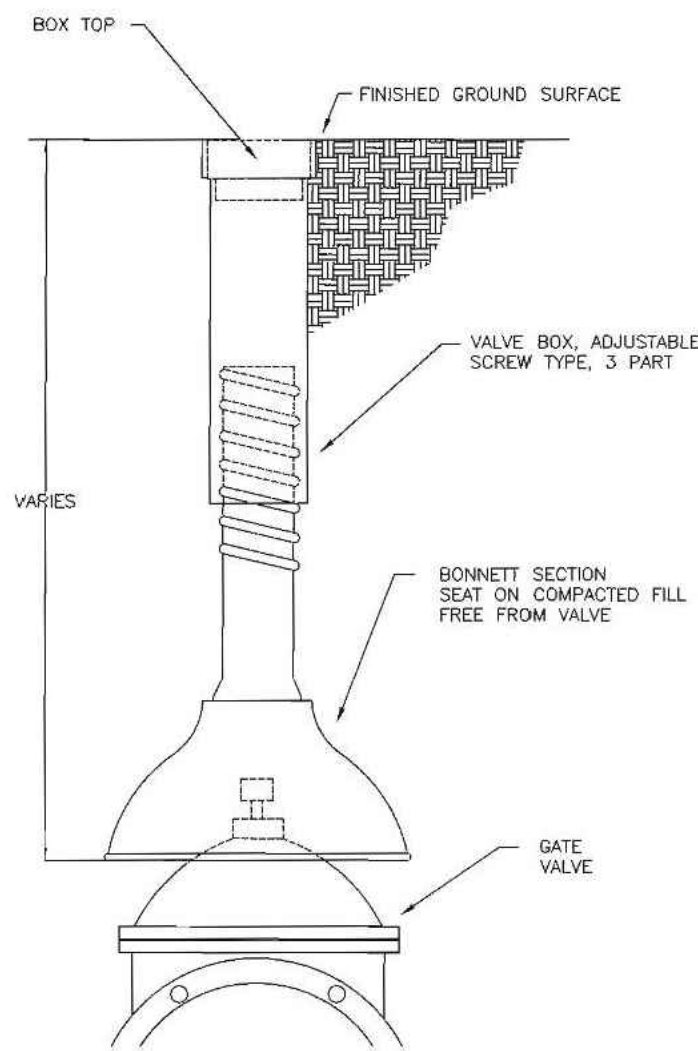
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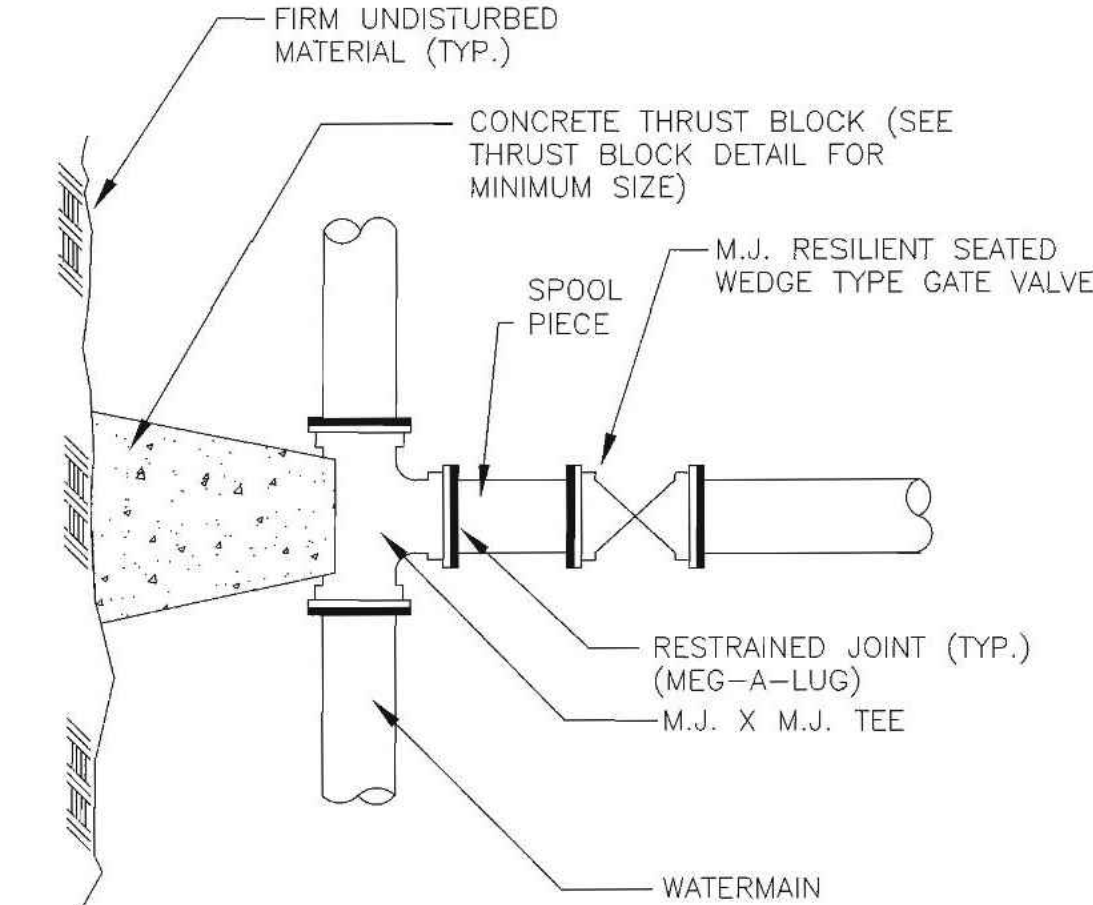
GALLUP HILL ROAD
SITE IMPROVEMENTS

Sheet Number:

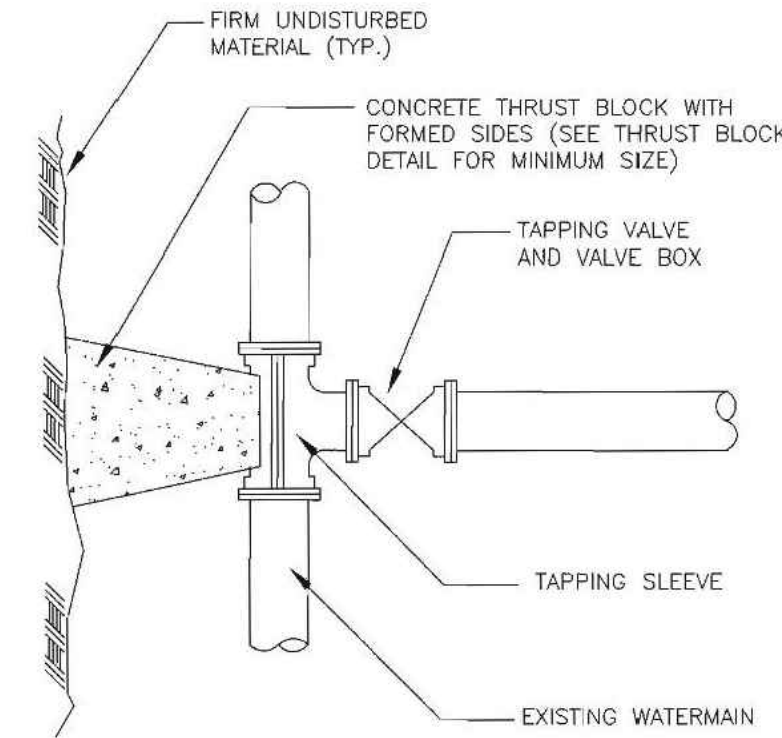
HWY-9



GATE BOX DETAIL
NOT TO SCALE



GATE VALVE CONNECTION DETAIL
NOT TO SCALE



NOTE: CONTRACTOR TO VERIFY OUTSIDE DIAMETER OF EXISTING MAIN.

TAPPING SLEEVE & VALVE DETAIL
NOT TO SCALE

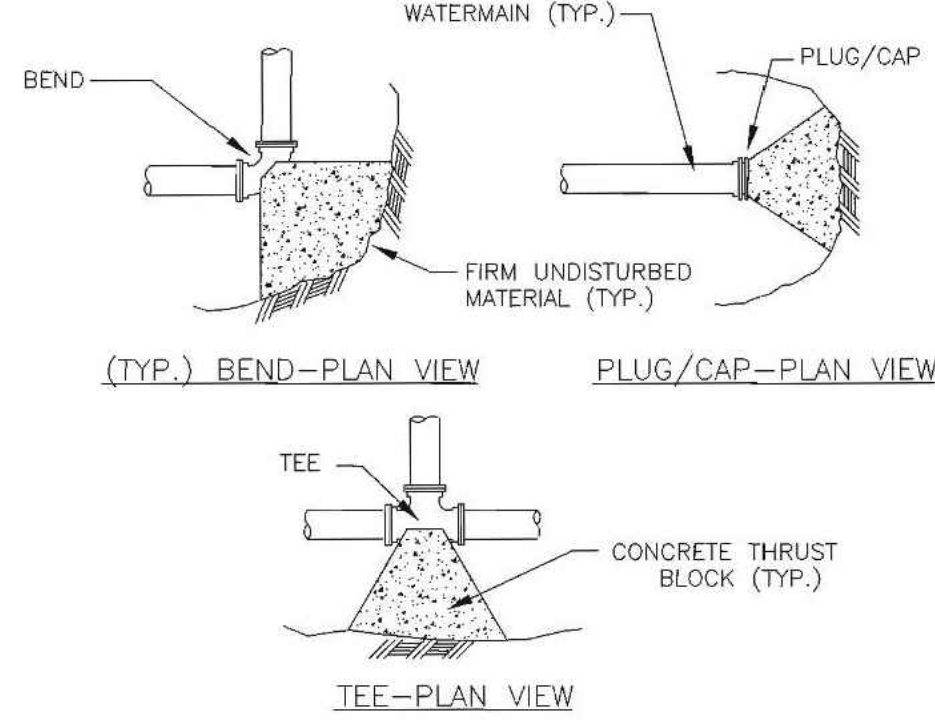
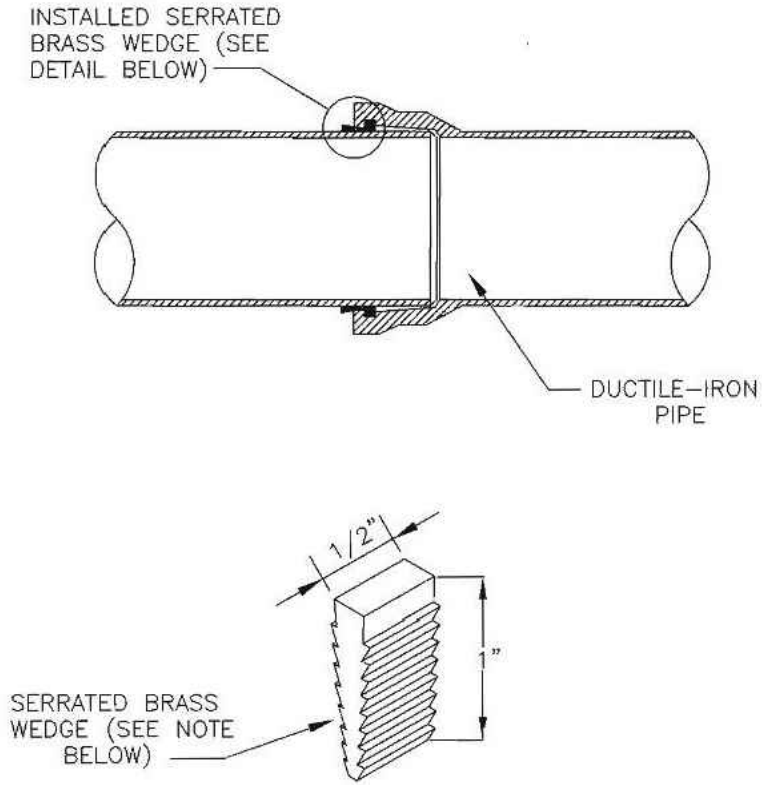


TABLE OF BEARING AREAS (S.F.)			
SIZE OF MAIN (IN.)	BEND (90)	BENDS (45 & UNDER)	TEES, CAPS OR PLUGS
8 & UNDER	6	3	4
10 & 12	12	6	9

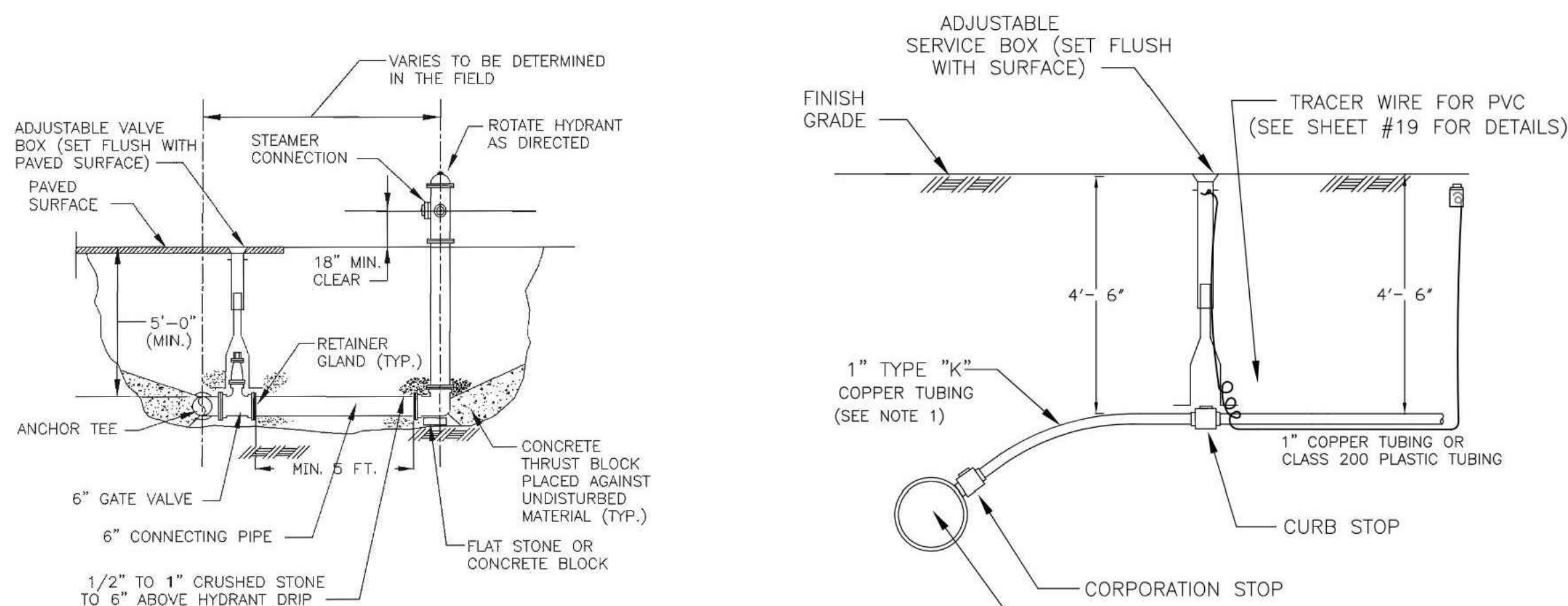
- NOTES: 1. CONCRETE FOR THRUST BLOCKS SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS.
2. THRUST BLOCK BEARING AREAS TOO BE IN ACCORDANCE WITH TABLE, UNLESS DETERMINED OTHERWISE BY THE ENGINEER BECAUSE OF SOIL CONDITIONS.
3. THRUST BLOCK SIDES SHALL BE FORMED WITH PLYWOOD.

THRUST BLOCK DETAILS
NOT TO SCALE



NOTE: BRASS WEDGES ARE TO BE INSTALLED ON ALL DUCTILE-IRON, PUSH-ON PIPING, INCLUDING HYDRANT BRANCHES, ETC., TO PROVIDE FOR ELECTRICAL THAWING. FOR 2" THROUGH 12" PIPE, TWO WEDGES SHALL BE USED PER JOINT; FOR LARGER DIAMETER PIPE FOUR WEDGES SHALL BE USED PER JOINT. EACH WEDGE IS DRIVEN INTO THE OPENING BETWEEN THE PLAIN END AND THE BELL UNTIL SNUG. WHEN FOUR WEDGES ARE USED, THEY ARE INSTALLED SIDE BY SIDE, IN PAIRS.

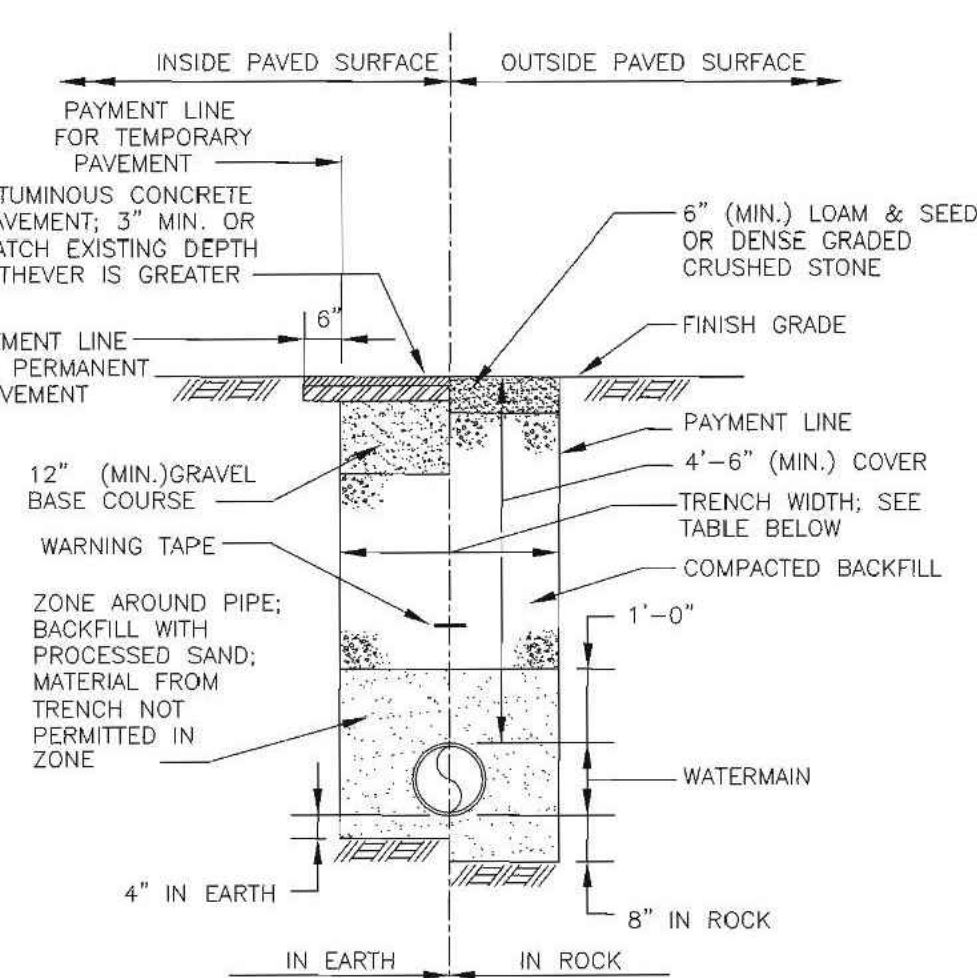
SERRATED BRASS WEDGE DETAIL
NOT TO SCALE



NOTE: DEPTH OF HYDRANT BURY TO SUIT INSTALLED DEPTH OF COVER OVER WATERMAIN.

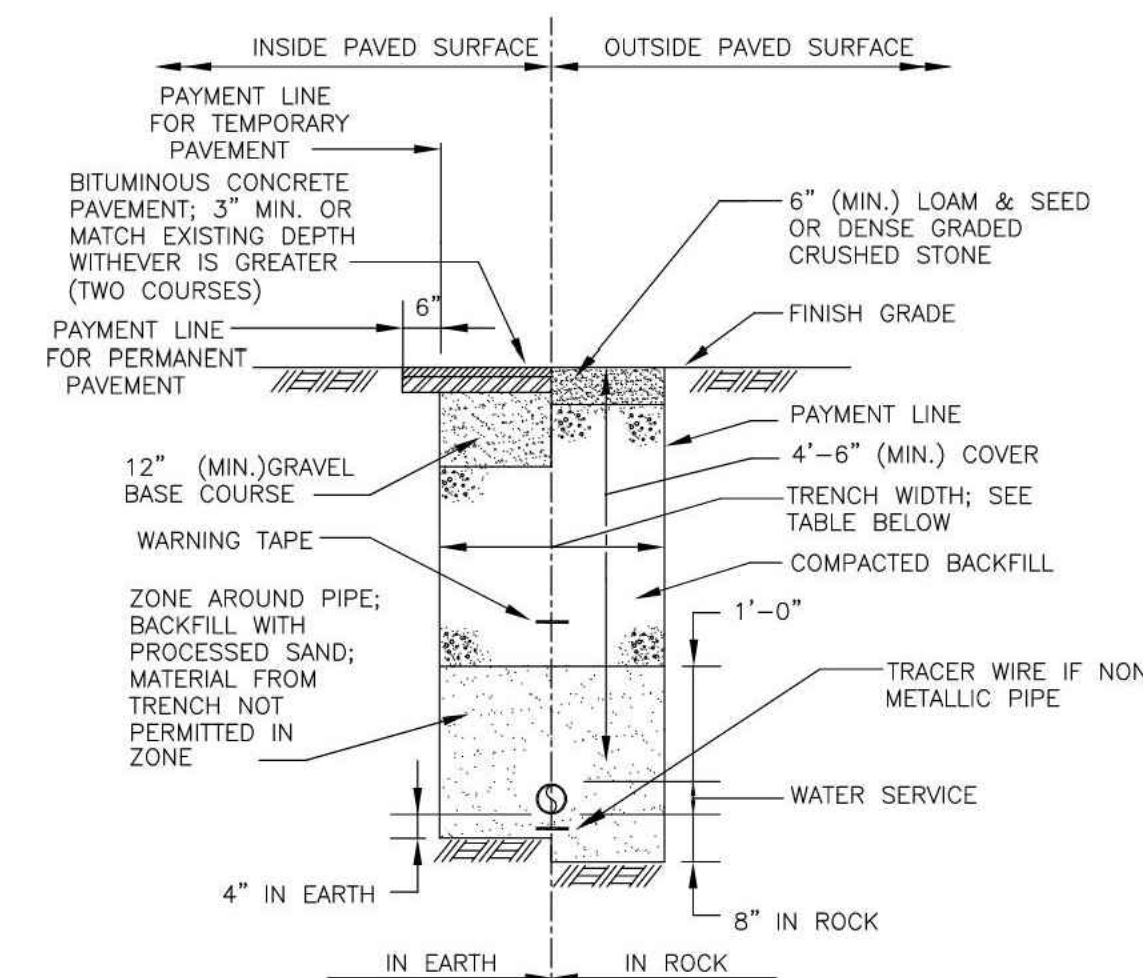
HYDRANT ASSEMBLY DETAIL
NOT TO SCALE

1. MINIMUM SIZE OF ANY WATER SERVICE INSTALLED FROM MAIN TO PROPERTY LINE SHALL BE 1".
 2. TYPE "K" COPPER TUBING MUST BE INSTALLED FROM MAIN TO PROPERTY LINE.
 3. TYPE "K" COPPER TUBING OR CLASS 200 PLASTIC TUBING MUST BE INSTALLED FROM PROPERTY LINE TO BUILDING WITH TRACER WIRE (SEE SHEET 19 FOR DETAILS).
 4. METER PIT MAY REPLACE CURB STOP, BOX, AND HOUSE METER IN BASEMENT.
 5. ALL JOINTS TO METER SHALL BE FLARED OR COMPRESSION TYPE.
 6. BUILDINGS WITHOUT BASEMENTS MUST HAVE EXTERIOR METER PITS.
 7. SERVICE LINES MUST BE CALKED INSIDE FOUNDATION WALL SLEEVE.
 8. BACKFILL: HAND-FILL WITH SAND OR EQUAL TO 12" ABOVE PIPE.
 9. TAPPED COLLARS MAY BE USED FOR SERVICE CONNECTIONS.
 10. ELECTRICAL GROUNDING WILL NOT BE PERMITTED ON ANY PORTION OF AN EXISTING COPPER WATER SERVICE PARTIALLY REPLACED BY PLASTIC PIPE.
- * Pipe rating shall be class 200 water service pipe manufactured to meet or exceed requirements of water service tubing Class 200 (ASTM Standard D-2737 CTS-00). The pipe shall bear the emblem of National Sanitation Foundation for use in potable water systems. Class 200 water service pipe must be approved by I.A.P.M.D. for use as underground water service pipe and shall bear the seal of the Uniform Plumbing Code. The pipe must conform to the National Bureau of Standards Product Standards Requirements.
- *(CTS-00 Indicates Copper Tubing Size, Outside Diameter)



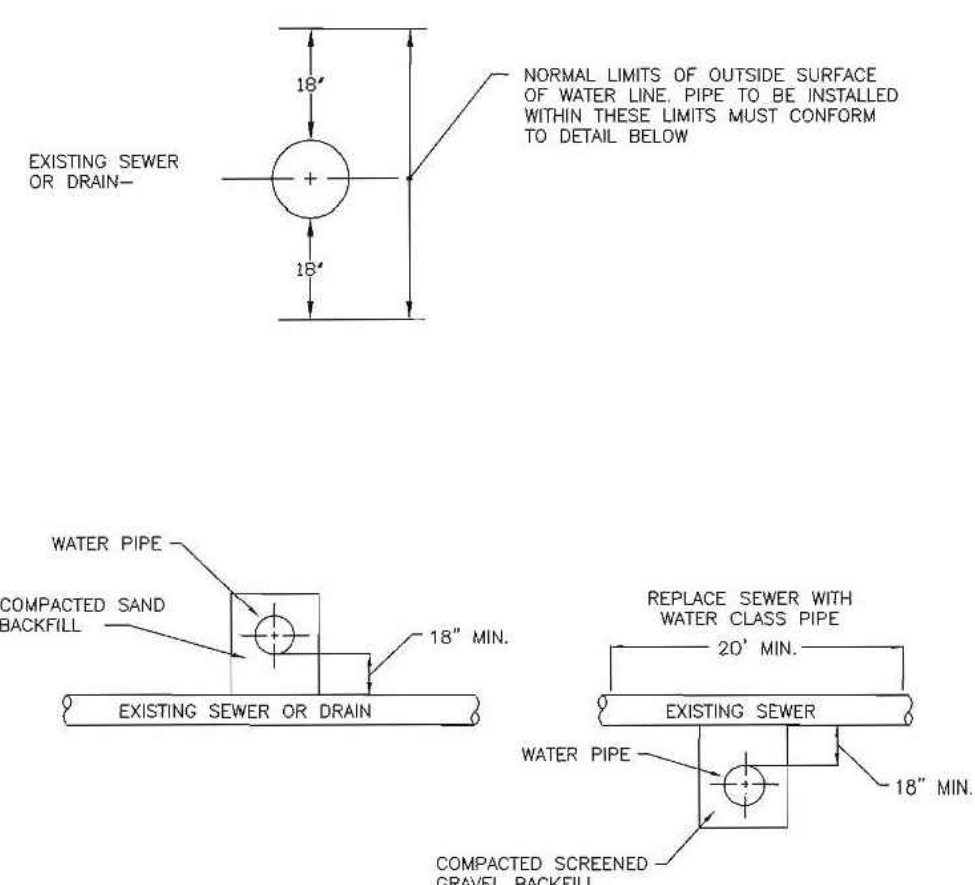
NOTE: PAYMENT FOR PAVEMENT INSTALLED BEYOND PAYMENT LINE WILL BE MADE ONLY WHEN SUCH INSTALLATION IS APPROVED BY THE ENGINEER.

WATERMAIN TRENCH DETAIL
NOT TO SCALE



NOTE: PAYMENT FOR PAVEMENT INSTALLED BEYOND PAYMENT LINE WILL BE MADE ONLY WHEN SUCH INSTALLATION IS APPROVED BY THE ENGINEER.

WATER SERVICE TRENCH DETAIL
NOT TO SCALE



TYPICAL SEWER AND DRAIN CROSSING
NOT TO SCALE

Project: TOWN OF LEDYARD, CT



LEDYARD HIGH SCHOOL
MULTI-USE PATHWAY &
SIDEWALK EXTENSION
L071-0001

741 COLONEL LEDYARD HIGHWAY
LEDYARD, CT 06339

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Revisions:

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Approved By: MJJ

W&S Project No.: ENG20-1119

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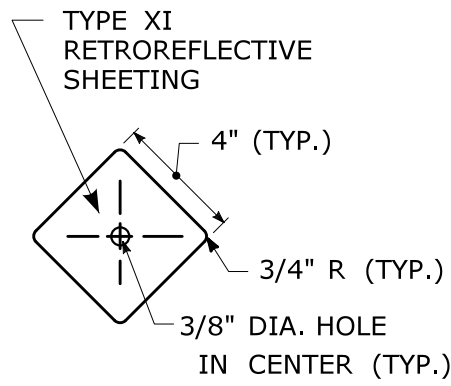
Drawing Title:

GROTON UTILITY
DETAILS

Sheet Number:

DET-07

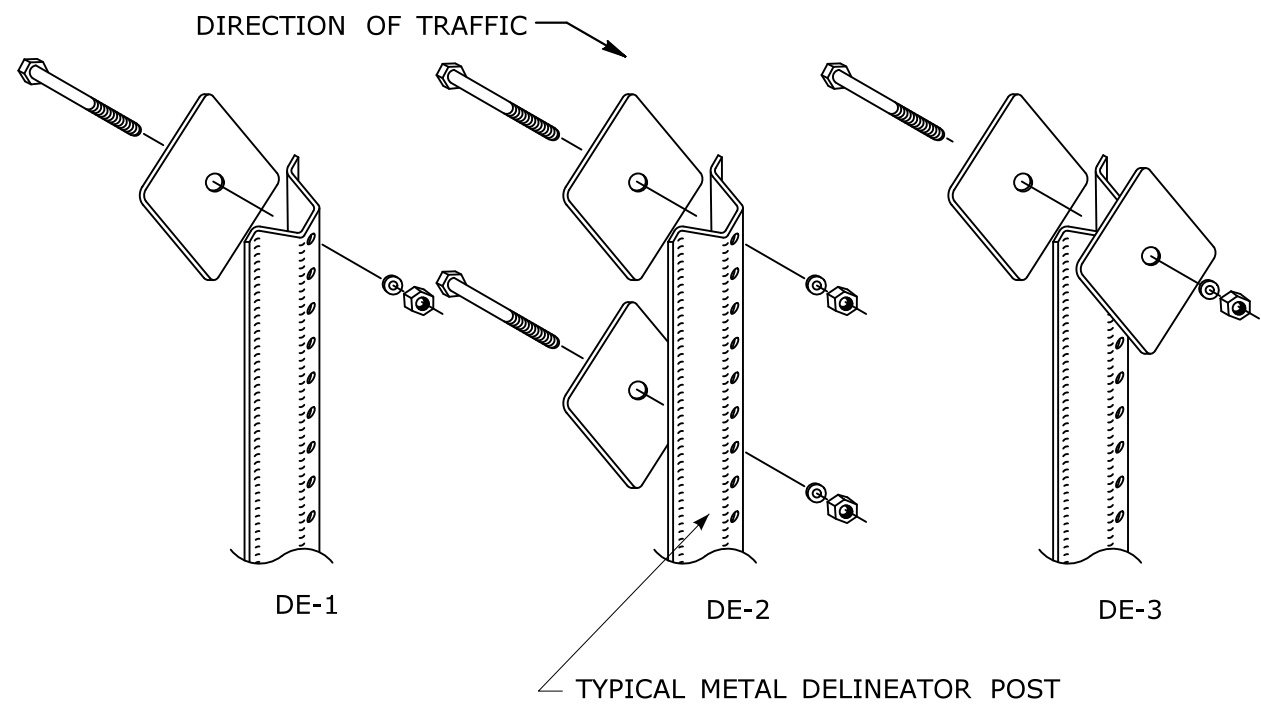
DELINEATORS DE-1, DE-2, DE-3
INSTALLATION ON DELINEATOR POSTS



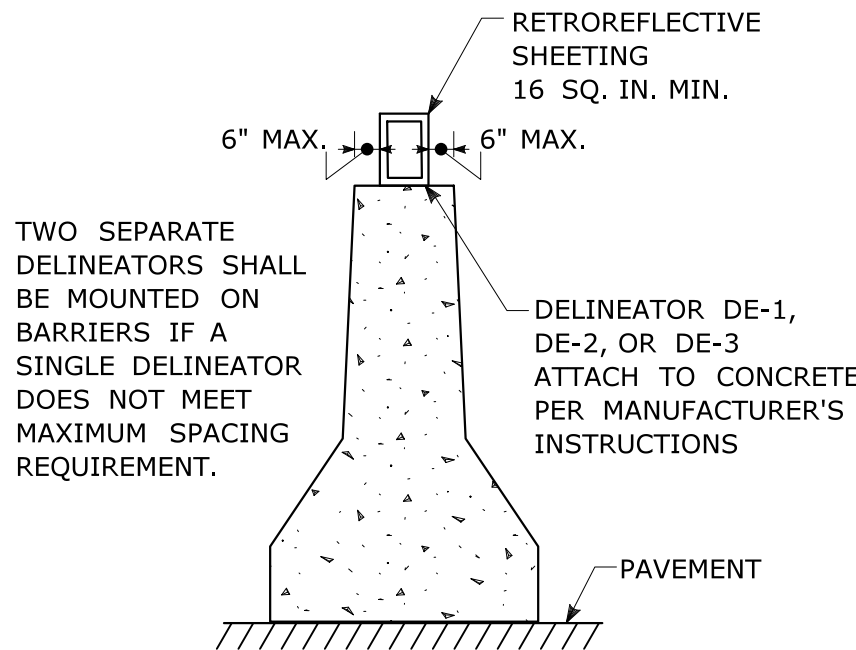
COLORS: - YELLOW, WHITE OR RED.
DELINEATORS - .0625" THK. ALUMINUM ALLOY.

FACE SHALL BE PRESSURE SENSITIVE, SELF ADHERING,
TYPE XI RETROREFLECTIVE SHEETING.

DELINEATORS SHALL BE FASTENED WITH 5/16" STAINLESS STEEL ASTM A-193 CLASS 1,
GRADE B8 (TYPE 304) OR BETTER HEX HEAD BOLT (LENGTH AS REQUIRED), WASHER AND
FIBER INSERT SELF LOCKING NUT, ON STANDARD METAL DELINEATOR POST.



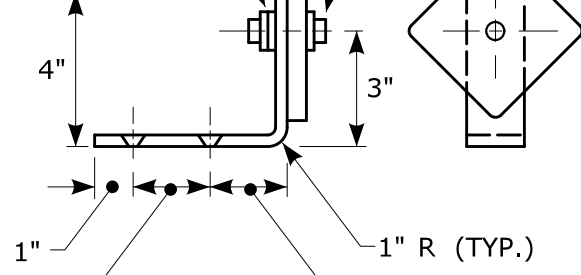
INSTALLATION ON
PERMANENT CONCRETE BARRIER,
BRIDGE PARAPETS AND
RETAINING WALLS



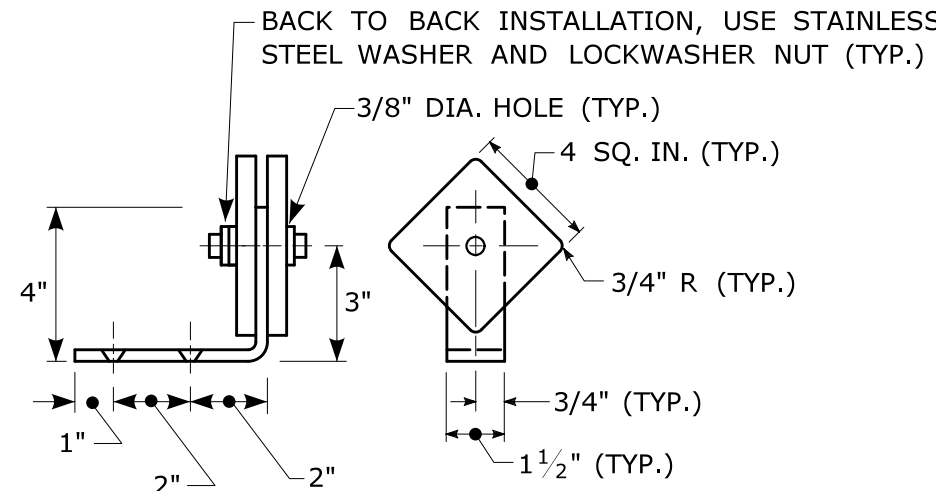
DELINEATORS DE-4, DE-4A, DE-5
FOR INSTALLATION ON METAL BRIDGE RAIL

5/16" STAINLESS STEEL ASTM A-193,
CLASS 1 GRADE B8 (TYPE 304) OR BETTER
HEX HEAD BOLT, LENGTH AS REQ'D (TYP.)

USE STAINLESS STEEL ASTM A-194
GRADE 8 (TYPE 304) OR BETTER
WASHER AND LOCKWASHER NUT (TYP.)

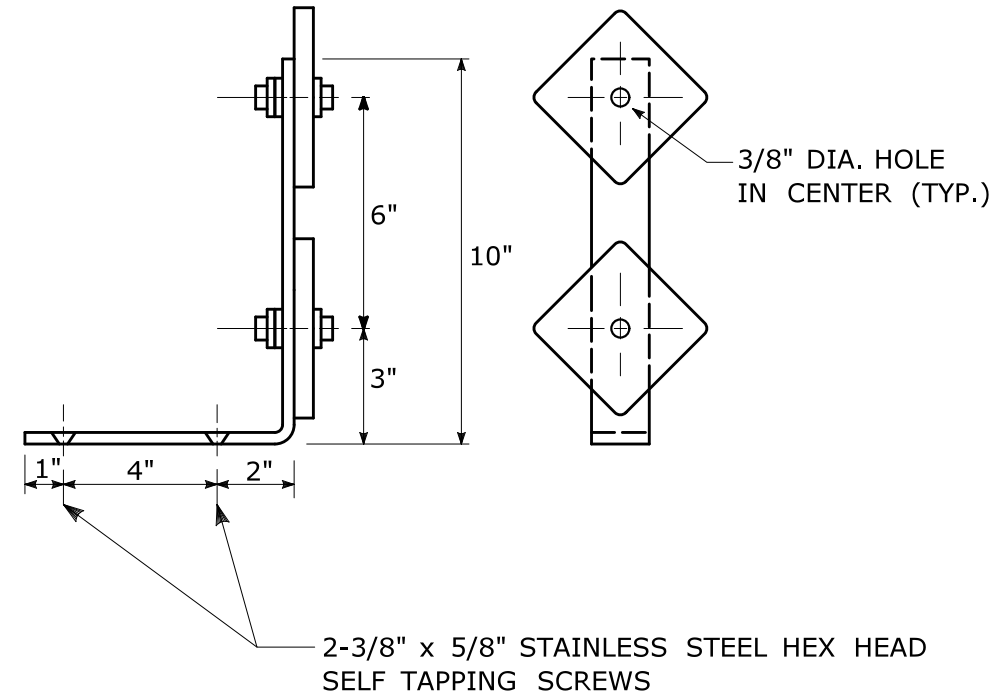


DE-4



DE-4A

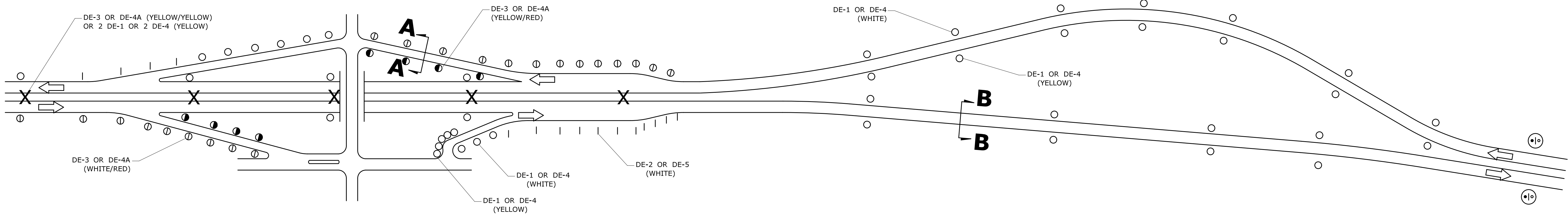
COLORS: - YELLOW, WHITE OR RED.
DELINEATORS - .0625" THK. ALUMINUM ALLOY.
BRACKET - .125" THK. ALUMINUM ALLOY, AND SHALL CONFORM TO SPECIFICATION M.18.07-03 BRIDGE RAIL MOUNTING BRACKETS.
FACE SHALL BE PRESSURE SENSITIVE, SELF ADHERING, TYPE XI RETROREFLECTIVE SHEETING.
USE STAINLESS STEEL WASHERS ON FACE OF DELINEATORS, 5/8" O.D. X 3/8" I.D. X .032" THK. (TYP.)



DE-5

DELINEATORS TYPE DE-4, DE-4A, AND DE-5 TO BE PAID FOR UNDER SECTION 12.05 DELINEATORS.

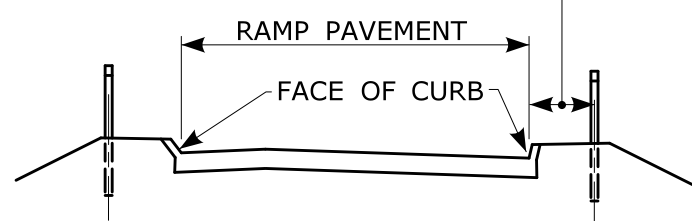
TYPICAL MAINLINE & INTERCHANGE DELINEATION



DELINEATOR SPACING NOTES:

- 1) AT LOCATIONS WHERE THE MEDIAN WIDTH (BETWEEN SHOULDERS) IS 12' OR LESS, AND MEDIAN BEAM RAIL IS PRESENT, TYPE DE-3 DELINEATORS SHALL BE MOUNTED WITHIN THE MEDIAN BEAM RAIL.
- 2) SPACING ON MAINLINE EXPRESSWAY TANGENTS SHALL BE 400'.
- 3) SPACING ON MAINLINE EXPRESSWAY CURVES SHALL BE AS SPECIFIED IN THE MUTCD TABLE.
- 4) ON ACCELERATION AND DECELERATION LANES AND ON-RAMP TANGENT SECTIONS, DELINEATOR SPACING SHALL BE 100'.
- 5) ON CURVED PORTIONS OF RAMPS, DELINEATOR SPACING SHALL BE IN ACCORDANCE WITH THE MUTCD TABLE, BUT NOT TO EXCEED 100'.
- 6) ON OFF-RAMP TANGENT SECTIONS, DELINEATOR SPACING SHALL BE 50' THROUGHOUT.
- 7) GUIDE RAIL AND BARRIER DELINEATOR SPACING SHALL BE AS SPECIFIED IN THE CORRESPONDING SPECIFICATIONS AND DETAILS.

2' TYP. TO 8' MAX. AS DIRECTED BY ENGINEER.
ONE OFFSET SHALL BE USED THROUGHOUT PROJECT.
DELINEATORS TO BE PLACED IN LINE WITH
GUIDE RAIL POSTS WHEN GUIDE RAIL IS 8' OR LESS
FROM THE EDGE OF THE ROAD.

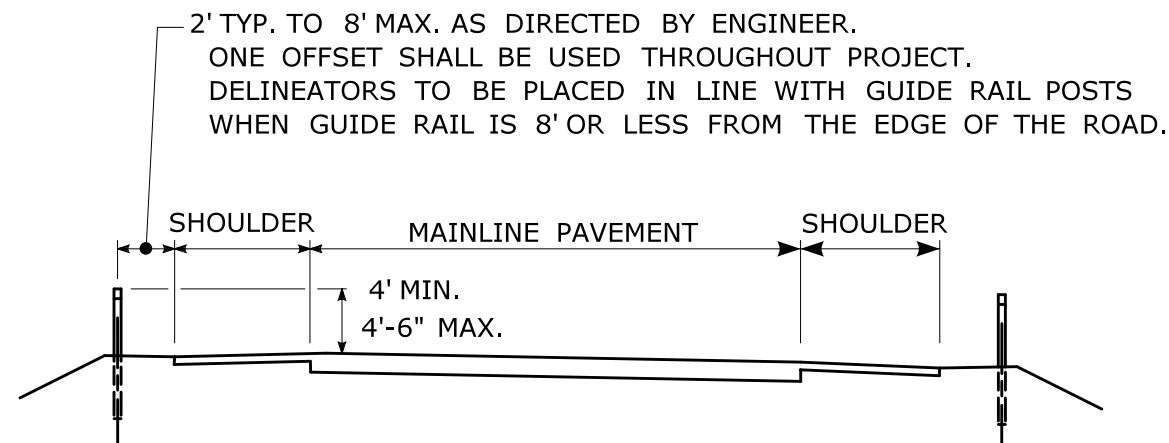


SECTION A-A

DELINEATOR PLACEMENT ON RAMPS
ON TANGENT SECTIONS - RIGHT SIDE OF RAMP
ON CURVED SECTIONS - BOTH SIDES OF CURVE
ON TANGENT AND CURVE - BOTH SIDES OF OFF-RAMP

LEGEND:

- DE-1 DELINEATORS OR DE-4 DELINEATOR ASSEMBLY
- | DE-2 DELINEATORS OR DE-5 DELINEATOR ASSEMBLY (WHITE)
- X DE-3 DELINEATOR OR DE-4A DELINEATOR ASSEMBLY (YELLOW & YELLOW)
- DE-3 DELINEATORS OR DE-4A DELINEATOR ASSEMBLY (BI-COLOR: YELLOW & RED)
- ⊕ DE-3 DELINEATORS OR DE-4A DELINEATOR ASSEMBLY (BI-COLOR: WHITE & RED)
- ⊕ D10-1, 2, 3, OR 4 ASSEMBLY TO BE INSTALLED WHERE SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER. (REFERENCE LOCATION/MILE POST SIGNS)



SECTION B-B

DELINEATOR PLACEMENT ON MAINLINE

COLOR APPLICATION, FOR DE-1 THRU DE-5

1. UNLESS INDICATED OTHERWISE, THE DELINEATOR OR BARRIER DELINEATOR COLOR SHALL CONFORM TO THE COLOR OF THE PAVEMENT EDGE LINE ON THE SIDE OF THE ROAD WHERE THE DELINEATORS OR BARRIER DELINEATORS ARE PLACED.
2. SINGLE RED DELINEATORS ARE MOUNTED ON THE BACK SIDE OF DELINEATOR POSTS FOR WRONG WAY DRIVER APPLICATIONS.

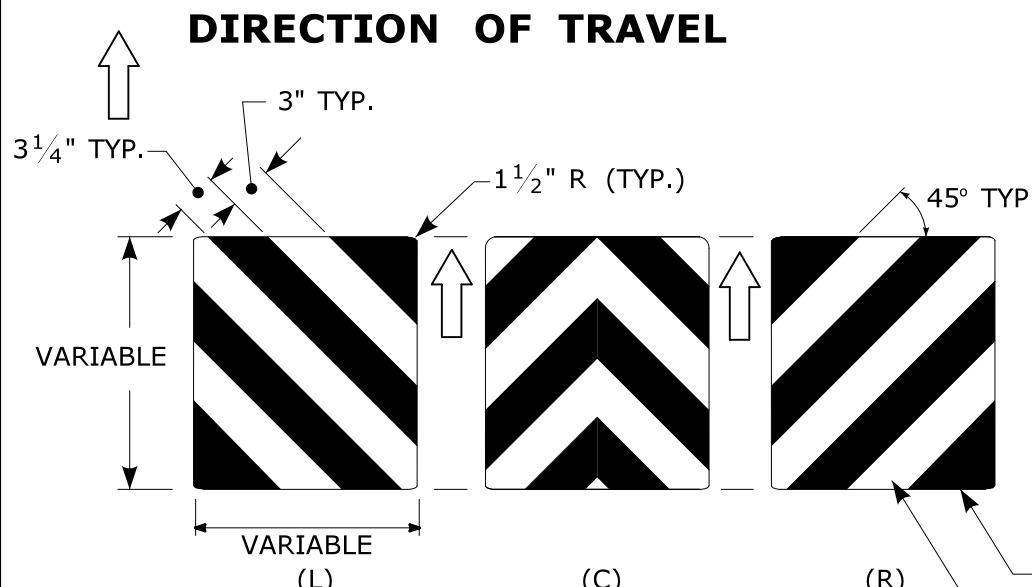
MUTCD TABLE - APPROXIMATE SPACING
FOR DELINEATORS ON HORIZONTAL CURVES

RADIUS (R) OF CURVE (feet)	APPROXIMATE SPACING (S) ON CURVE (feet)
50	20
115	25
180	35
250	40
300	50
400	55
500	65
600	70
700	75
800	80
900	85
1,000	90

DISTANCE IN FEET WERE ROUNDED TO THE NEAREST 5 FEET. SPACING FOR SPECIFIC RADII MAY BE INTERPOLATED FROM TABLE. THE MINIMUM SPACING SHOULD BE 20 FEET. THE SPACING ON CURVES SHOULD NOT EXCEED 300 FEET. IN ADVANCE OF OR BEYOND A CURVE, AND PROCEEDING AWAY FROM THE END OF THE CURVE, THE SPACING OF THE FIRST DELINEATOR IS 2S, THE SECOND IS 3S, AND THE THIRD 6S BUT NOT TO EXCEED 300 FEET.

S REFERS TO THE DELINEATOR SPACING FOR SPECIFIC RADII
COMPUTED FROM THE FORMULA: $S=3\sqrt{R-50}$.

ATTENUATOR REFLECTORS
SIGN #40-4266



THIS SHEETING WITHOUT A SUBSTRATE TO BE INSTALLED ON
THE NOSE OF THE IMPACT ATTENUATOR WITH ADHESIVE IN
ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
THE SHEETING SHALL COVER THE NOSE OF
THE IMPACT ATTENUATOR.
ON A CURVED NOSE, THE WIDTH OF THE SHEETING SHALL
EXTEND 1" BEYOND THE POINT OF CURVATURE ON
EACH SIDE OF THE NOSE.
THE HEIGHT AND WIDTH OF THE SHEETING VARIES DEPENDING
ON THE SIZE OF THE NOSE OF THE IMPACT ATTENUATOR.

ATTENUATOR REFLECTOR TO BE PAID
FOR UNDER SECTION 18.0 IMPACT ATTENUATOR

REV.	DATE	REVISION DESCRIPTION

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OFFICE OF ENGINEERING
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111



STATE OF CONNECTICUT
DEPARTMENT
OF
TRANSPORTATION



PROJECT NUMBER: L071-0001
PROJECT DESCRIPTION: LEDYARD HIGH SCHOOL MULTI-USE PATHWAY AND SIDEWALK EXTENSION
TOWN(S): LEDYARD
DRAWING TITLE: DELINEATION, DELINEATORS AND ATTENUATOR REFLECTOR DETAILS

DRAWING NO.

SHEET NO.
DET-18