

# STONY BROOK TRANSMISSION MAIN RENEWAL

## Norwich, Montville & Bozrah, Connecticut

Prepared For  
**NORWICH PUBLIC UTILITIES**



**Bid No. 7625**

Funded in part by a loan from the  
State of Connecticut  
Drinking Water State Revolving Fund

(Revised April 01, 2019)  
(Revised February 26, 2019)  
(Revised January 25, 2019)  
January 14, 2019

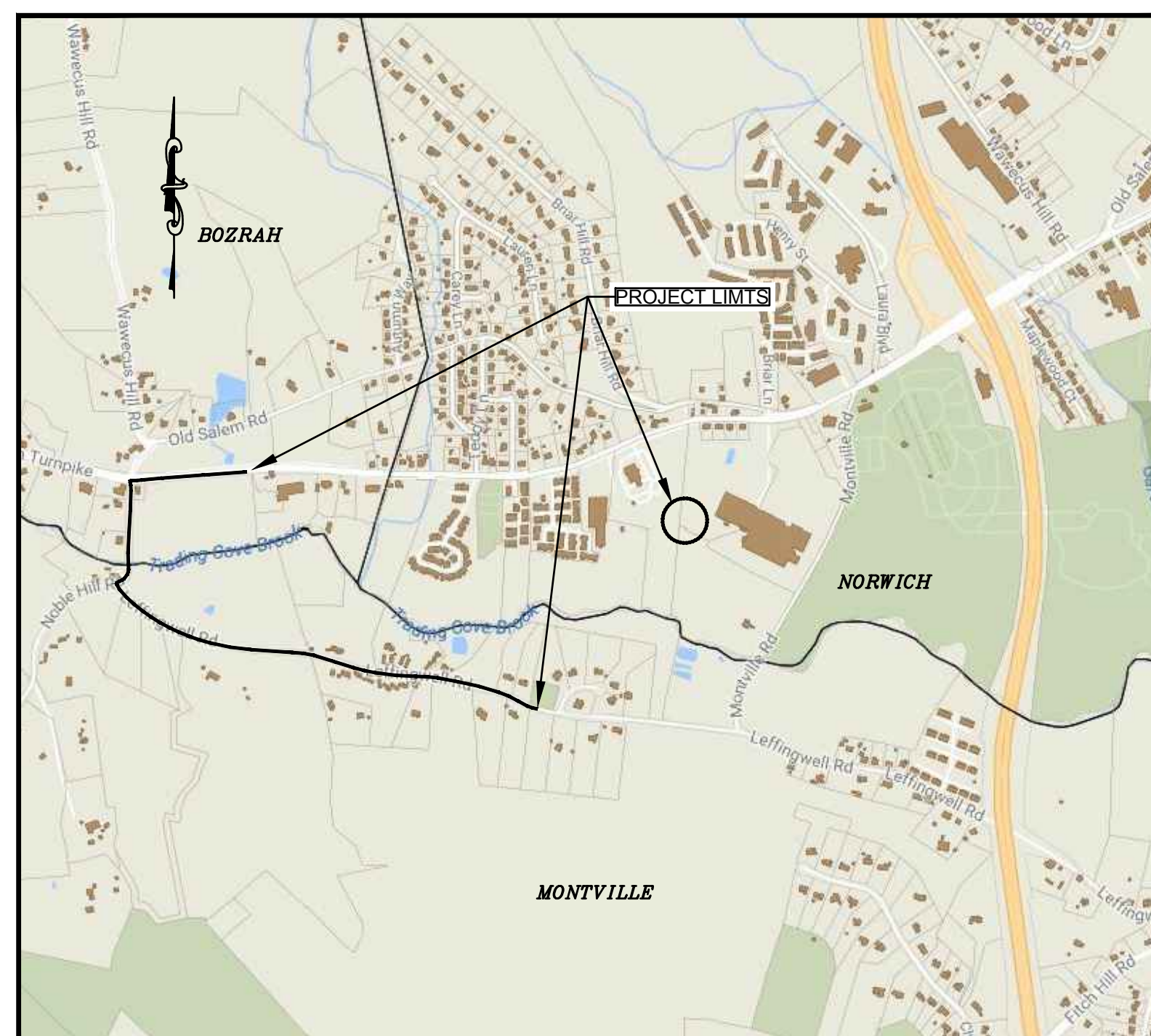
**CLA Engineers, Inc.**  
CIVIL • STRUCTURAL • SURVEYING  
317 Main Street Norwich, CT 06360  
(860) 886-1966 Fax (860) 886-9165

### INDEX TO DRAWINGS

Drawing No.	Description of Drawings
1	Key Plan
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10-12	Construction Details

### LEGEND TO DRAWINGS

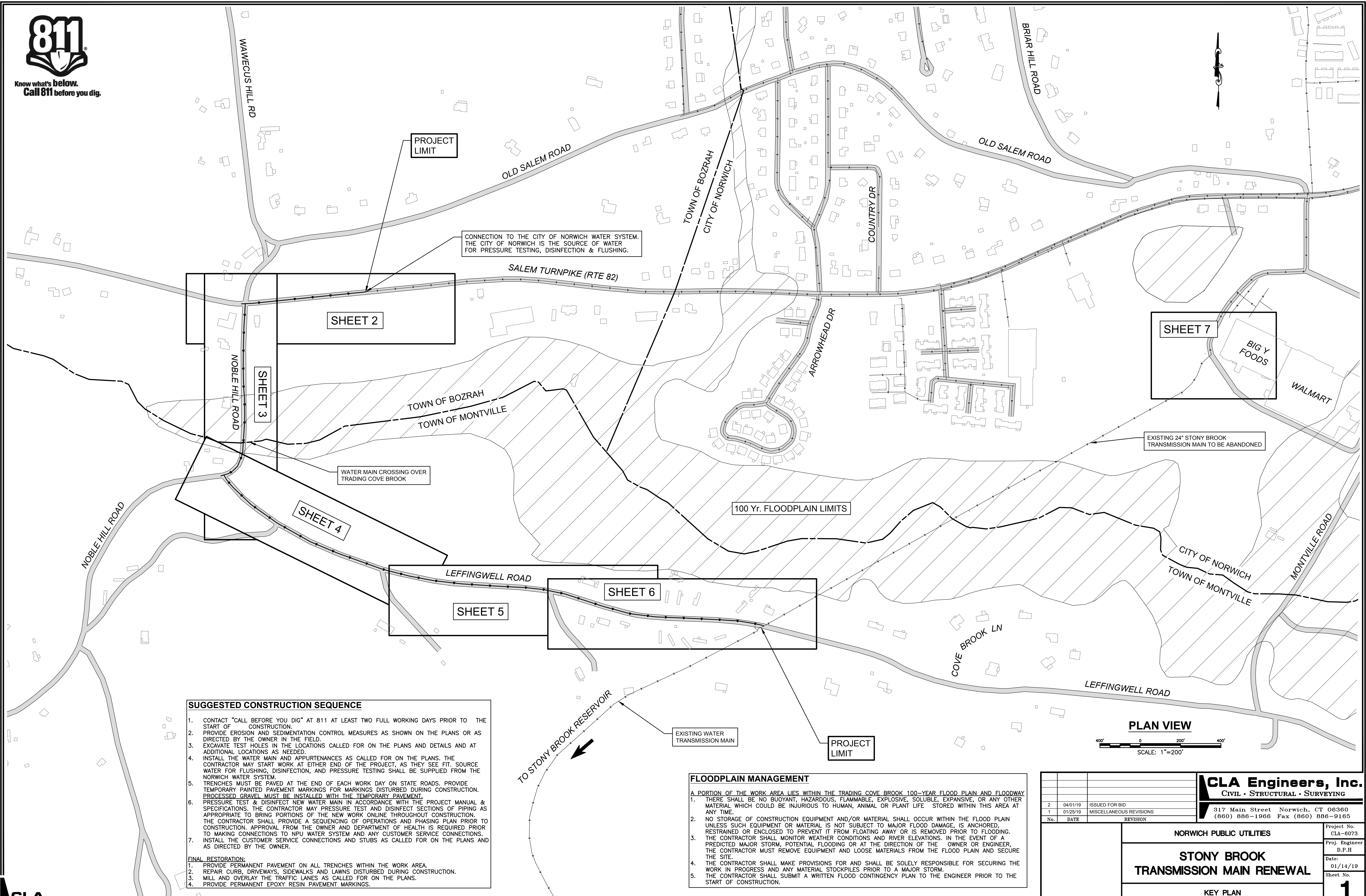
EXISTING		PROPOSED
---	PROPERTY LINE	---
- - -	EASEMENT LINE	- - -
□	PROP. MONUMENT, IPIN	○
---	EDGE OF ROAD (NO CURB)	---
---	EDGE OF ROAD (CURBED)	---
-126-	CONTOUR	-126-
~ ~ ~	TREE/BRUSH LINE	~ ~ ~
○ ○ ○	STONE WALL	○ ○ ○
○	UTILITY POLE	○
— OH — OH —	OVERHEAD WIRES	— OH — OH —
— — —	GUIDE RAIL	— — —
— [ ] —	CATCH BASIN & CULVERT	— [ ] —
○	SEWER MANHOLE	○
— S —	GRAVITY SEWER	— S —
— W —	SEWER FORCE MAIN	— W —
— WS — WS — WS —	WATER MAIN & VALVE	— W —
— WS — WS — WS —	WATER SERVICE & VALVE	— WS — WS — WS —
○	HYDRANT	○
— G —	GAS MAIN & VALVES	— G —
— T —	UNDERGROUND COMM.	— T —
— E —	UNDERGROUND ELEC.	— E —
—	SILT FENCE	— SF —
—	HAY BALES	—
—	FENCE	—
○	BORING	○
○	TREE OR SHRUB	○



**LOCATION MAP**  
SCALE: 1"=1,000±



Know what's below.  
Call 811 before you dig.



**SUGGESTED CONSTRUCTION SEQUENCE**

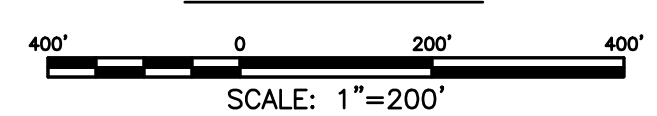
- CONTACT "CALL BEFORE YOU DIG" AT 811 AT LEAST TWO FULL WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- PROVIDE EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE PLANS OR AS DIRECTED BY THE OWNER IN THE FIELD.
- EXCAVATE TEST HOLES IN THE LOCATIONS CALLED FOR ON THE PLANS AND DETAILS AND AT ADDITIONAL LOCATIONS AS NEEDED.
- INSTALL THE WATER MAIN AND APPURTENANCES AS CALLED FOR ON THE PLANS. THE CONTRACTOR MAY START WORK AT EITHER END OF THE PROJECT, AS THEY SEE FIT. SOURCE WATER FOR FLUSHING, DISINFECTION, AND PRESSURE TESTING SHALL BE SUPPLIED FROM THE NORWICH WATER SYSTEM.
- TRENCHES MUST BE PAVED AT THE END OF EACH WORK DAY ON STATE ROADS. PROVIDE TEMPORARY PAINTED PAVEMENT MARKINGS FOR MARKINGS DISTURBED DURING CONSTRUCTION. PROCESSED GRAVEL MUST BE INSTALLED WITH THE TEMPORARY PAVEMENT.
- PRESSURE TEST & DISINFECT NEW WATER MAIN IN ACCORDANCE WITH THE PROJECT MANUAL & SPECIFICATIONS. THE CONTRACTOR MAY PRESSURE TEST AND DISINFECT SECTIONS OF PIPING AS APPROPRIATE TO BRING PORTIONS OF THE NEW WORK ONLINE THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A SEQUENCING OF OPERATIONS AND PHASING PLAN PRIOR TO CONSTRUCTION. APPROVAL FROM THE OWNER AND DEPARTMENT OF HEALTH IS REQUIRED PRIOR TO MAKING CONNECTIONS TO NPU WATER SYSTEM AND ANY CUSTOMER SERVICE CONNECTIONS.
- INSTALL THE CUSTOMER SERVICE CONNECTIONS AND STUBS AS CALLED FOR ON THE PLANS AND AS DIRECTED BY THE OWNER.

- FINAL RESTORATION:**
- PROVIDE PERMANENT PAVEMENT ON ALL TRENCHES WITHIN THE WORK AREA.
  - REPAIR CURB, DRIVEWAYS, SIDEWALKS AND LAWNS DISTURBED DURING CONSTRUCTION.
  - MILL AND OVERLAY THE TRAFFIC LANES AS CALLED FOR ON THE PLANS.
  - PROVIDE PERMANENT EPOXY RESIN PAVEMENT MARKINGS.

**FLOODPLAIN MANAGEMENT**

- A PORTION OF THE WORK AREA LIES WITHIN THE TRADING COVE BROOK 100-YEAR FLOOD PLAIN AND FLOODWAY
- THERE SHALL BE NO BUOYANT, HAZARDOUS, FLAMMABLE, EXPLOSIVE, SOLUBLE, EXPANSIVE, OR ANY OTHER MATERIAL WHICH COULD BE INJURIOUS TO HUMAN, ANIMAL OR PLANT LIFE STORED WITHIN THIS AREA AT ANY TIME.
  - NO STORAGE OF CONSTRUCTION EQUIPMENT AND/OR MATERIAL SHALL OCCUR WITHIN THE FLOOD PLAIN UNLESS SUCH EQUIPMENT OR MATERIAL IS NOT SUBJECT TO MAJOR FLOOD DAMAGE, IS ANCHORED, RESTRAINED OR ENCLOSED TO PREVENT IT FROM FLOATING AWAY OR IS REMOVED PRIOR TO FLOODING.
  - THE CONTRACTOR SHALL MONITOR WEATHER CONDITIONS AND RIVER ELEVATIONS. IN THE EVENT OF A PREDICTED MAJOR STORM, POTENTIAL FLOODING OR AT THE DIRECTION OF THE OWNER OR ENGINEER, THE CONTRACTOR MUST REMOVE EQUIPMENT AND LOOSE MATERIALS FROM THE FLOOD PLAIN AND SECURE THE SITE.
  - THE CONTRACTOR SHALL MAKE PROVISIONS FOR AND SHALL BE SOLELY RESPONSIBLE FOR SECURING THE WORK IN PROGRESS AND ANY MATERIAL STOCKPILES PRIOR TO A MAJOR STORM.
  - THE CONTRACTOR SHALL SUBMIT A WRITTEN FLOOD CONTINGENCY PLAN TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.

PLAN VIEW



No.	DATE	REVISION
2	04/01/19	ISSUED FOR BID
1	01/25/19	MISCELLANEOUS REVISIONS

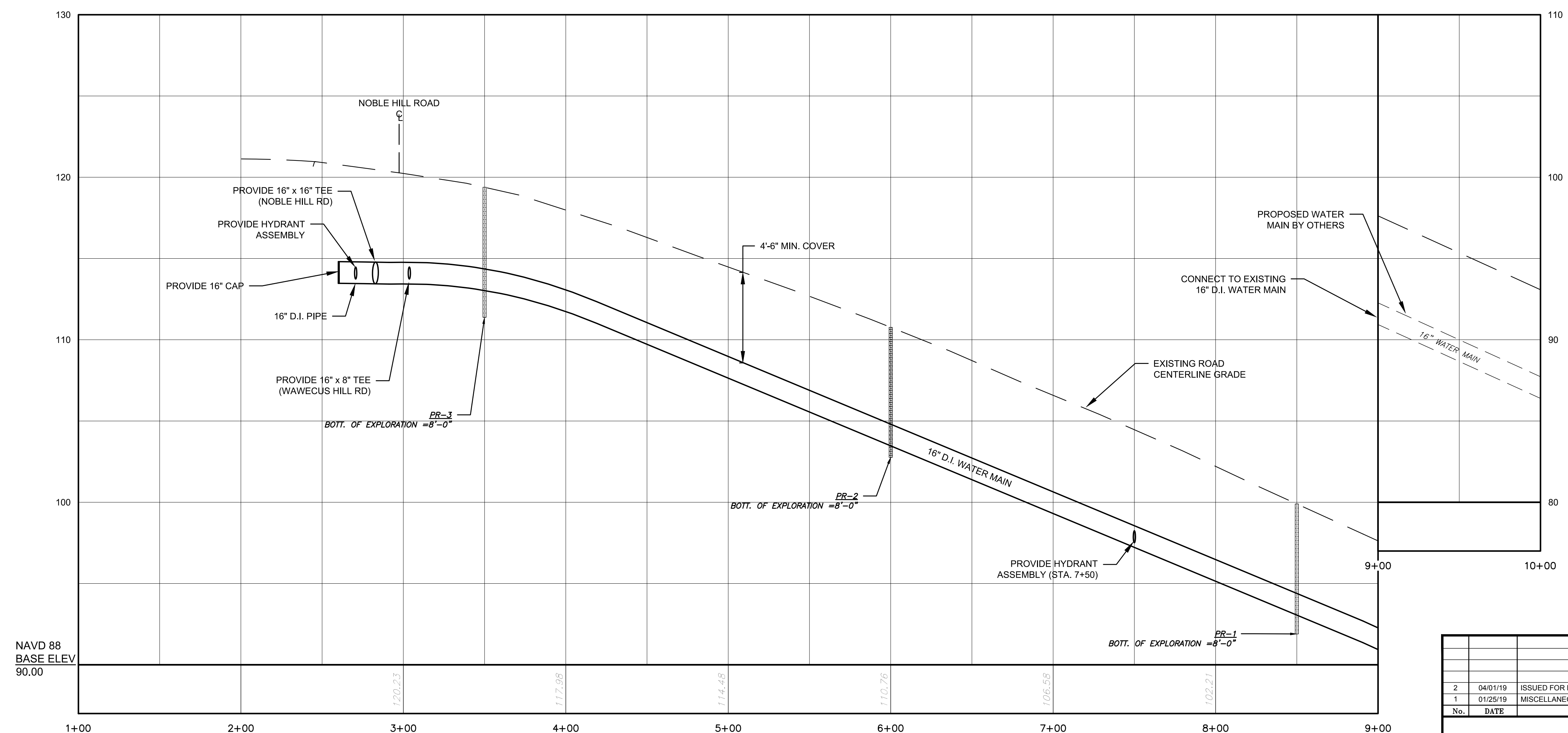
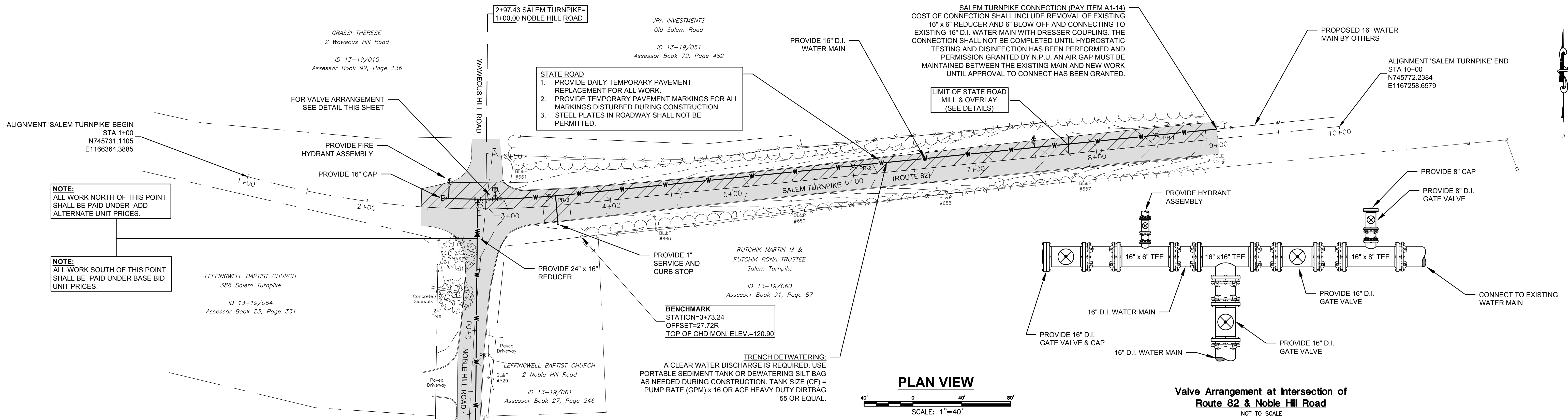
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<b>NORWICH PUBLIC UTILITIES</b>		Project No. CLA-6073
		Proj. Engineer D.P.H
<b>STONY BROOK TRANSMISSION MAIN RENEWAL</b>		Date: 01/14/19
		Sheet No. <b>1</b>
<b>KEY PLAN</b>		

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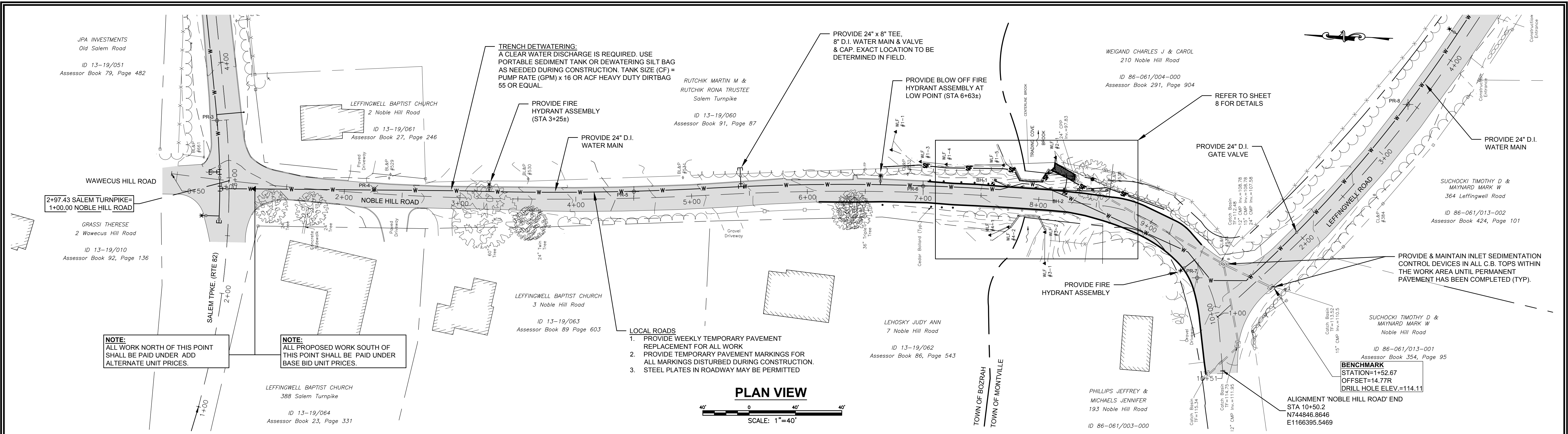




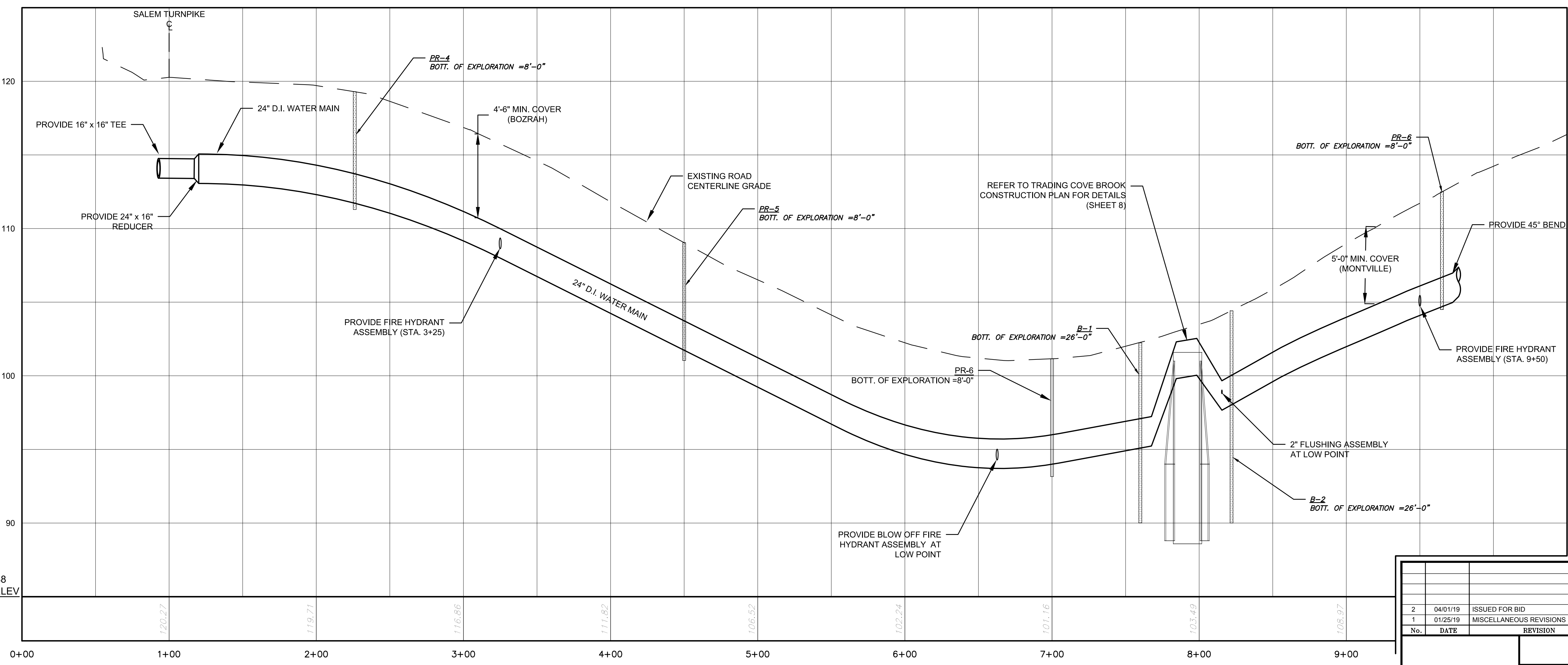
<b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING 317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165		Project No. CLA-6073 Proj. Engineer D.P.H. Date: 01/14/19 Sheet No. <b>2</b>
NORWICH PUBLIC UTILITIES <b>STONY BROOK TRANSMISSION MAIN RENEWAL</b> SITE PLAN 1		No. DATE REVISION 2 04/01/19 ISSUED FOR BID 1 01/25/19 MISCELLANEOUS REVISIONS

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**PLAN VIEW**  
SCALE: 1" = 40'

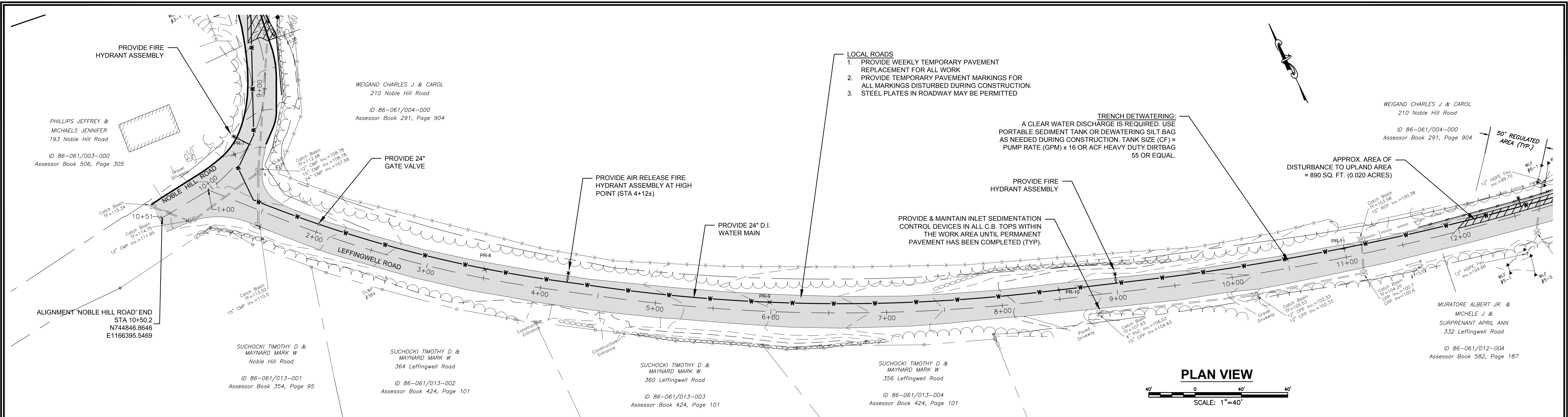


**PROFILE VIEW - NOBLE HILL ROAD**  
Sta. 0+00 to Sta. 10+50  
Horiz. Scale: 1" = 40'  
Vert. Scale: 1" = 4'

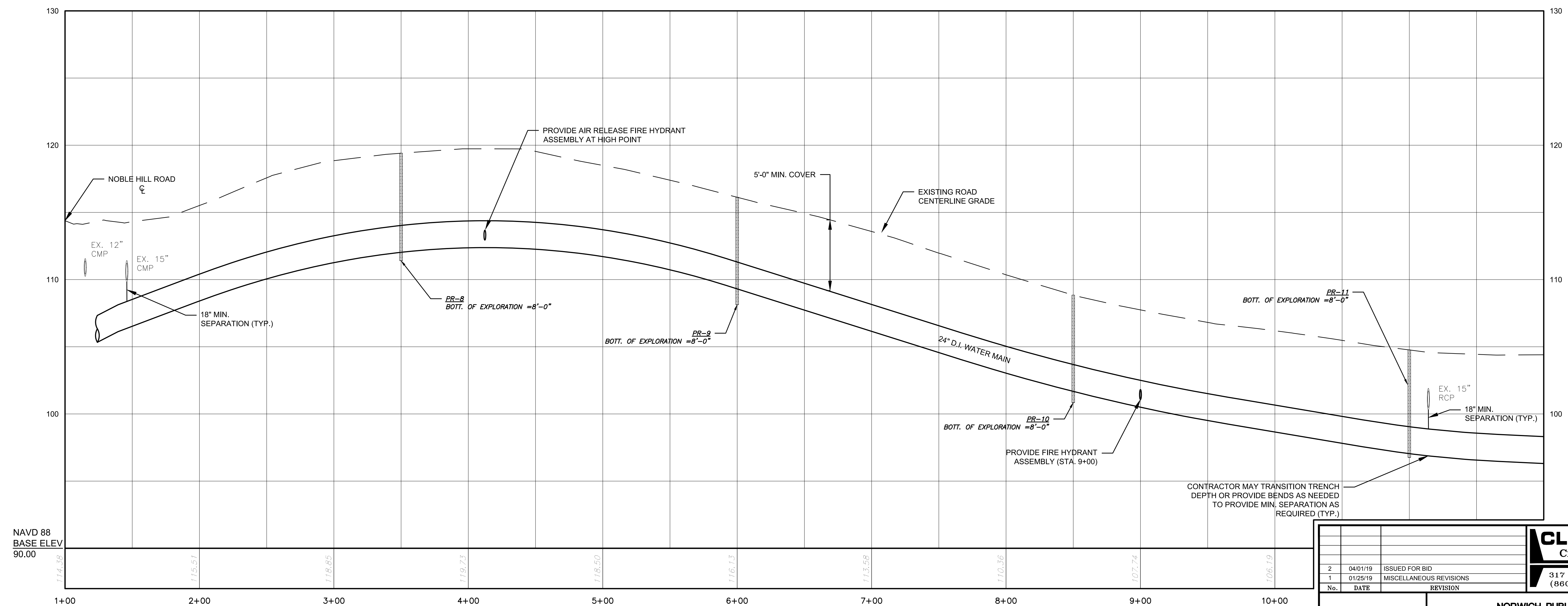
<b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING 317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165		Project No. CLA-6073 Proj. Engineer D.P.H. Date: 01/14/19 Sheet No. <b>3</b>									
<b>NORWICH PUBLIC UTILITIES</b> <b>STONY BROOK TRANSMISSION MAIN RENEWAL</b> SITE PLAN 2		Revision Table: <table border="1"> <tr> <th>No.</th> <th>DATE</th> <th>REVISION</th> </tr> <tr> <td>2</td> <td>04/01/19</td> <td>ISSUED FOR BID</td> </tr> <tr> <td>1</td> <td>01/25/19</td> <td>MISCELLANEOUS REVISIONS</td> </tr> </table>	No.	DATE	REVISION	2	04/01/19	ISSUED FOR BID	1	01/25/19	MISCELLANEOUS REVISIONS
No.	DATE	REVISION									
2	04/01/19	ISSUED FOR BID									
1	01/25/19	MISCELLANEOUS REVISIONS									

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**PLAN VIEW**  
SCALE: 1"=40'

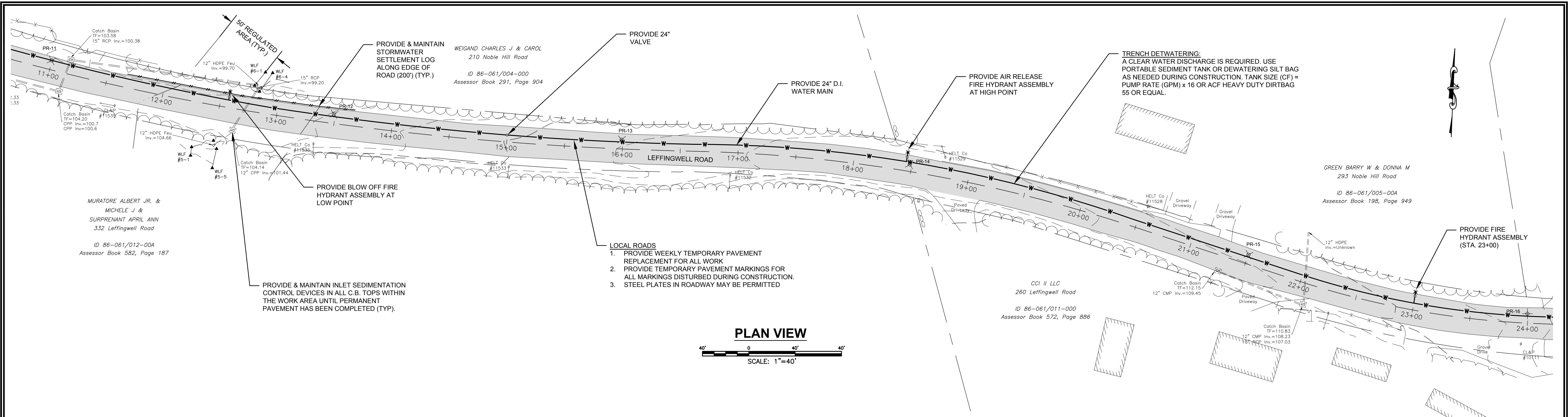


**PROFILE VIEW - LEFFINGWELL ROAD**  
Sta. 1+00 to Sta. 12+00  
Horiz. Scale: 1" = 40'  
Vert. Scale: 1" = 4'

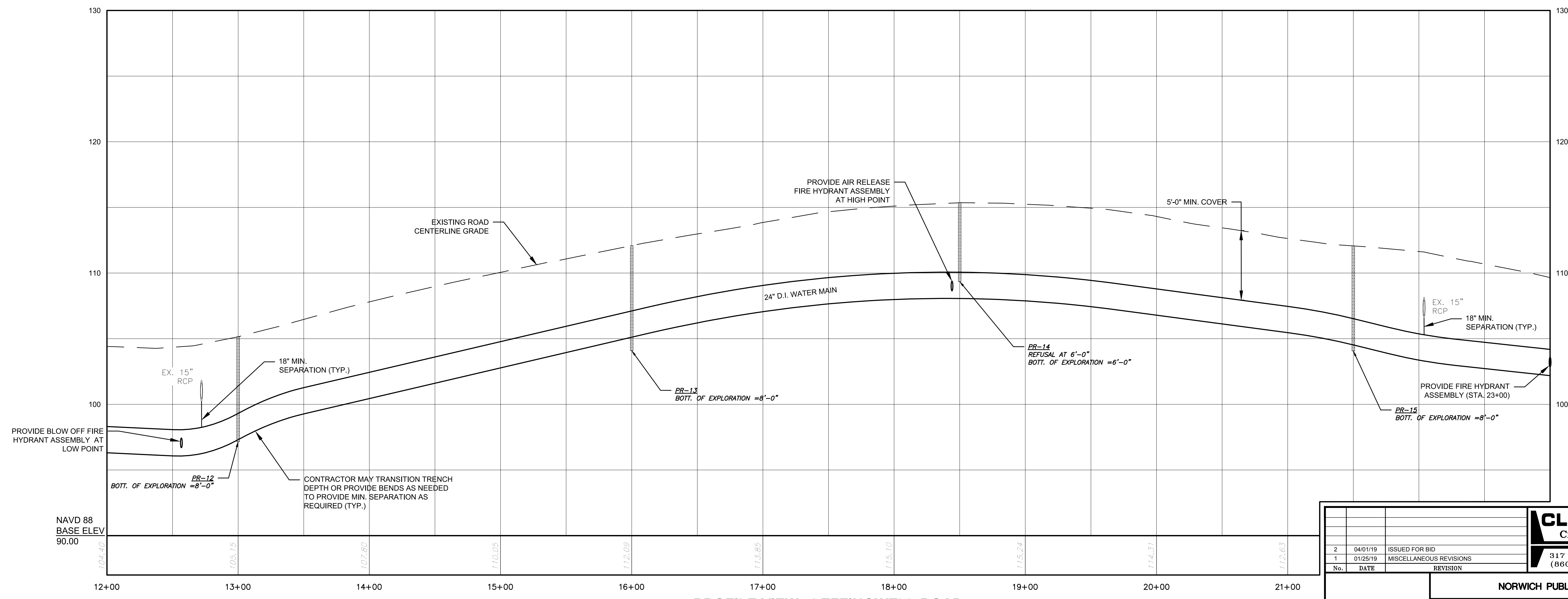
<b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING 317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165		Project No. CLA-6073 Proj. Engineer D.P.H. Date: 01/14/19 Sheet No. <b>4</b>
<b>NORWICH PUBLIC UTILITIES</b> <b>STONY BROOK TRANSMISSION MAIN RENEWAL</b> SITE PLAN 3		Project No. CLA-6073 Proj. Engineer D.P.H. Date: 01/14/19 Sheet No. <b>4</b>

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**PLAN VIEW**  
 SCALE: 1"=40'

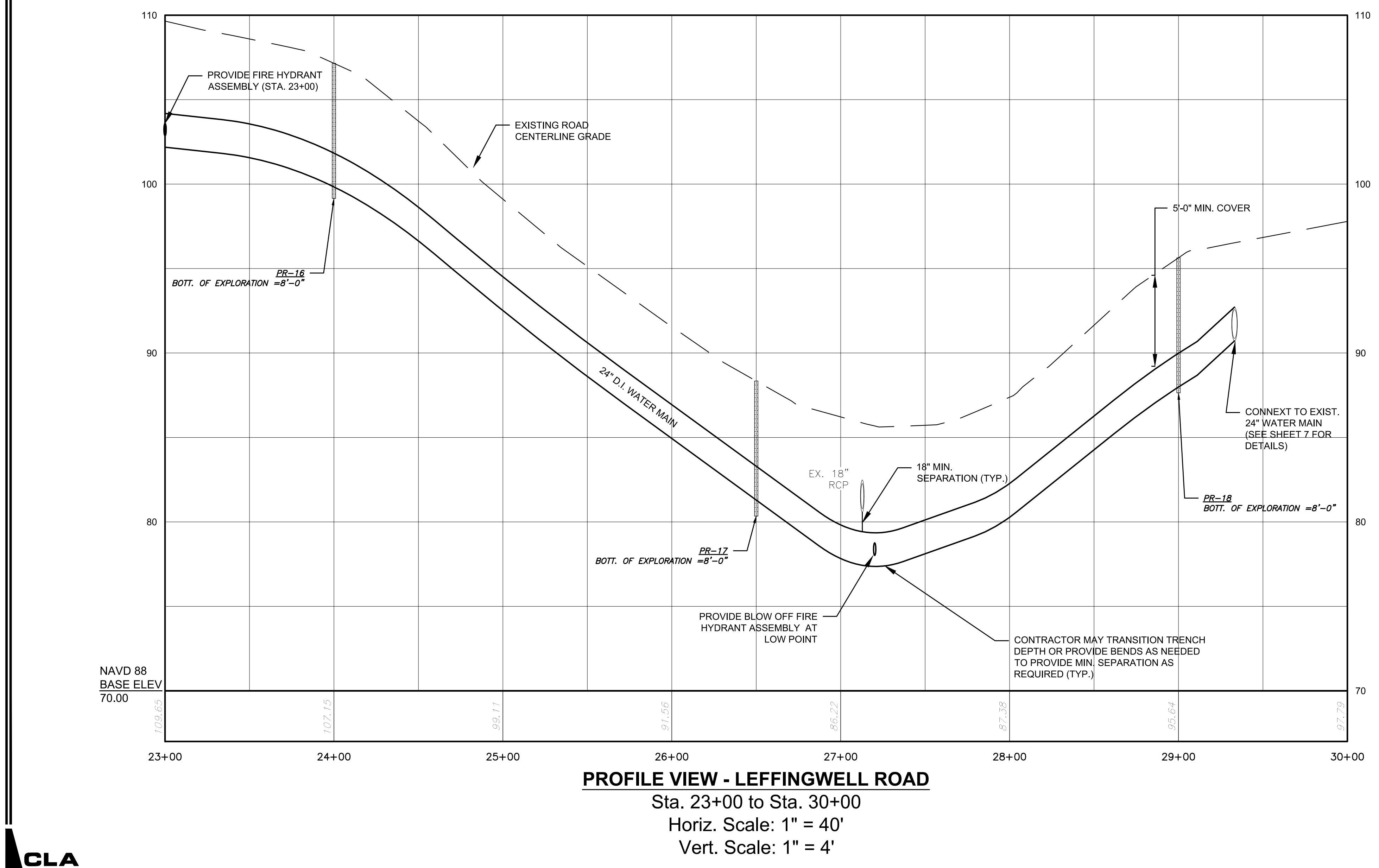
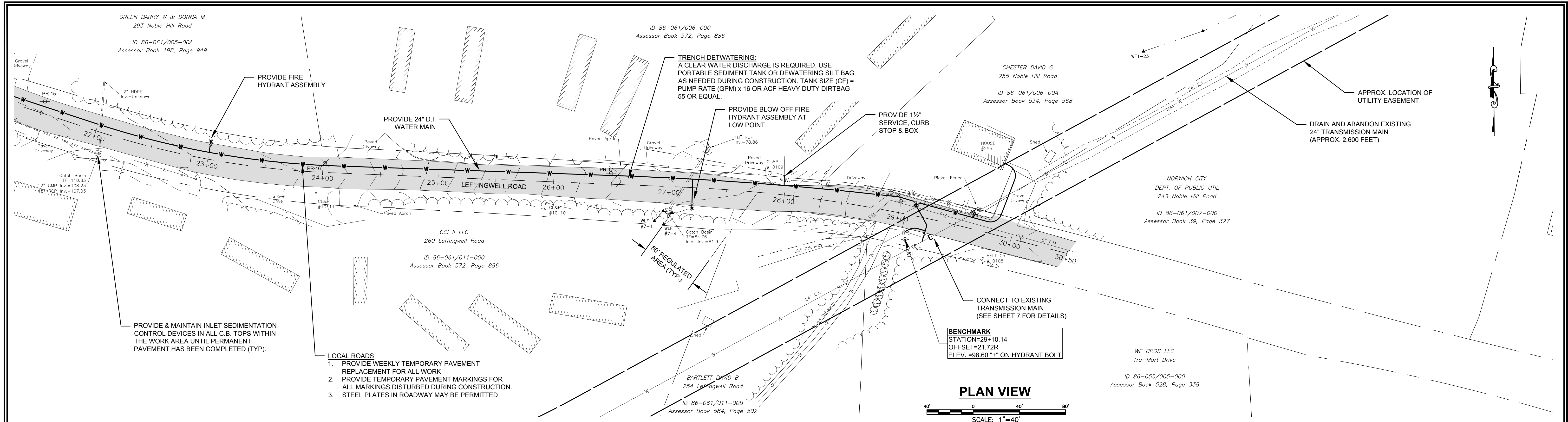


**PROFILE VIEW - LEFFINGWELL ROAD**  
 Sta. 12+00 to Sta. 23+00  
 Horiz. Scale: 1" = 40'  
 Vert. Scale: 1" = 4'

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2 04/01/19 ISSUED FOR BID 1 01/25/19 MISCELLANEOUS REVISIONS		NORWICH PUBLIC UTILITIES <b>STONY BROOK TRANSMISSION MAIN RENEWAL</b> SITE PLAN 4

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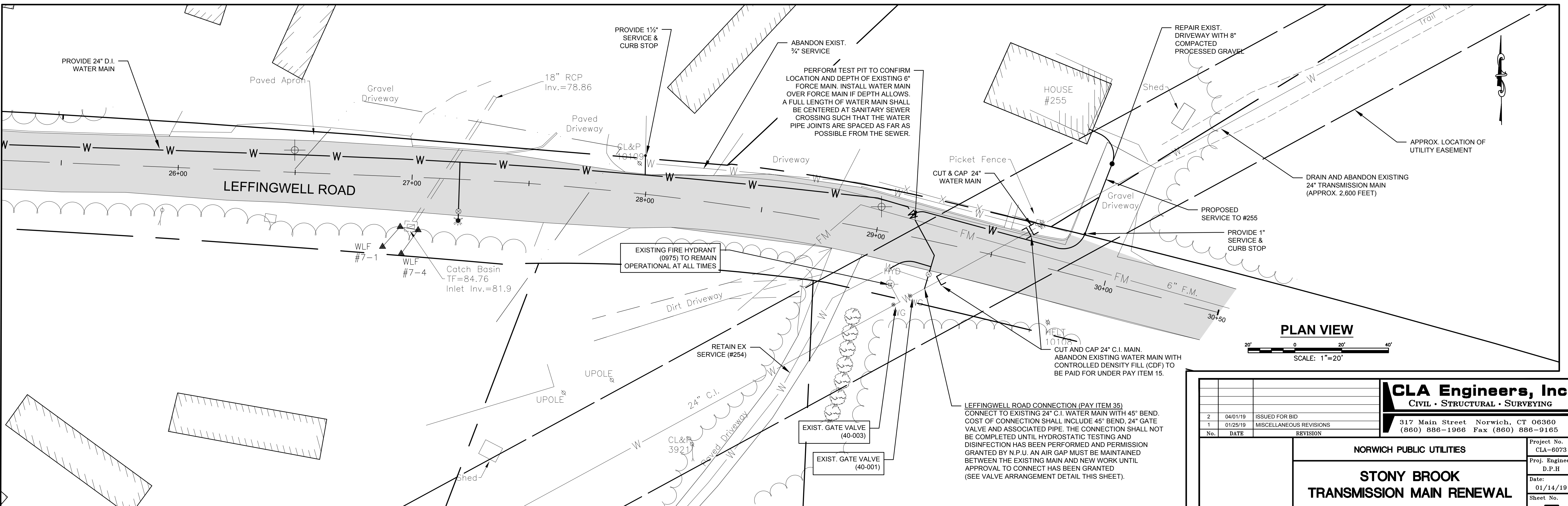
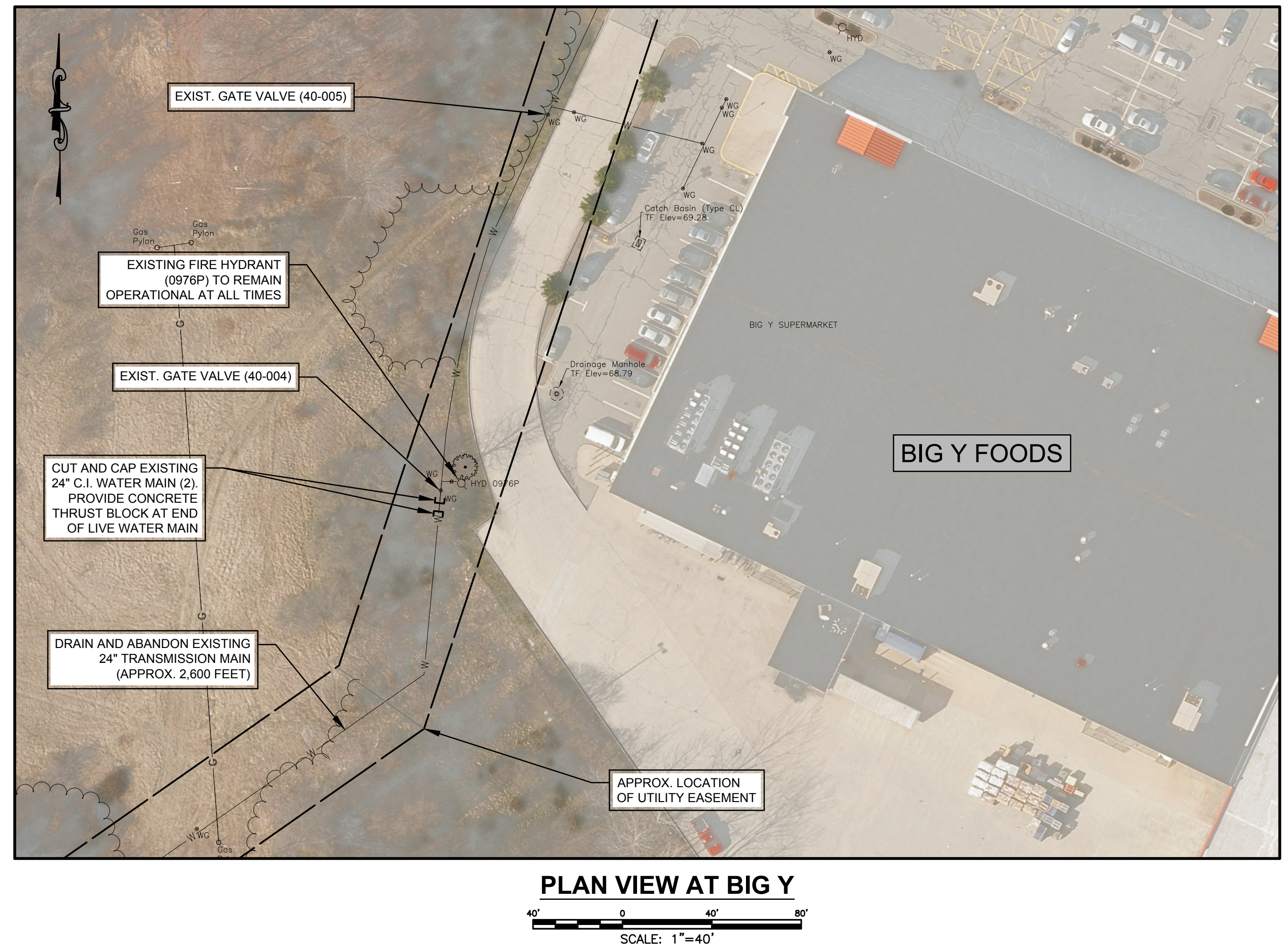
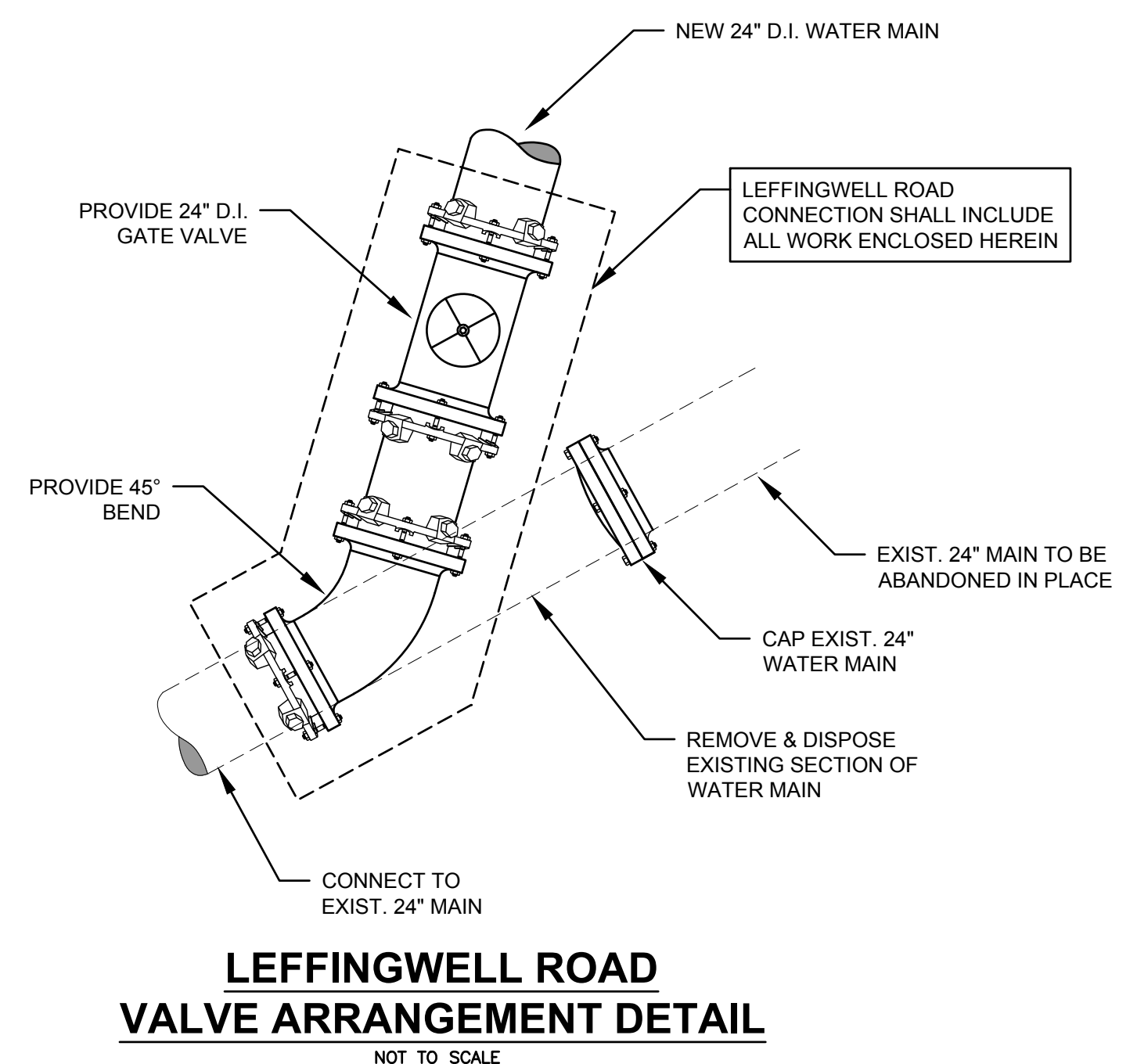
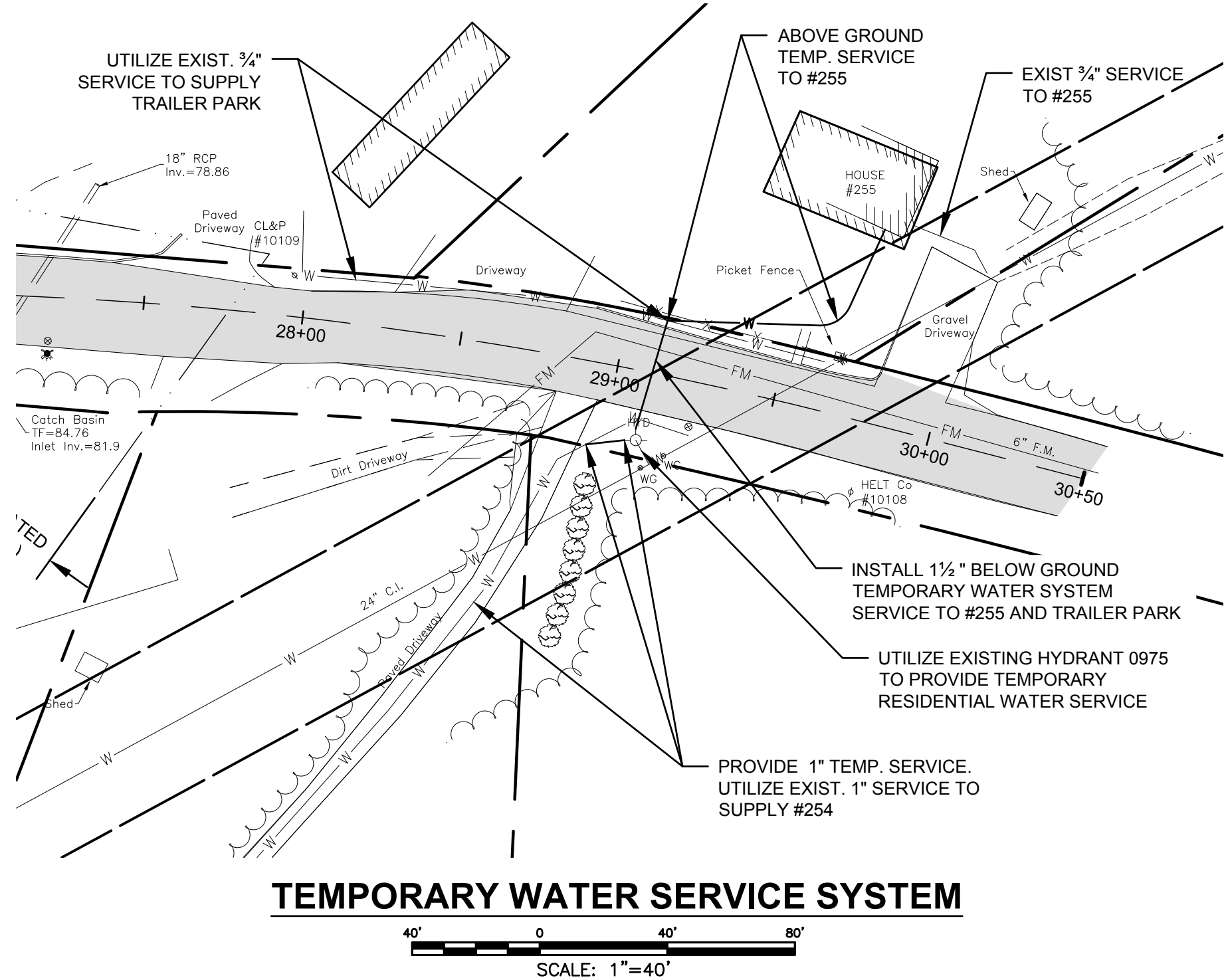
		<b>CLA Engineers, Inc.</b> Civil • Structural • Surveying	
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2	04/01/19	ISSUED FOR BID	Project No. CLA-6073
1	01/25/19	MISCELLANEOUS REVISIONS	Proj. Engineer D.P.H
No.	DATE	REVISION	Date: 01/14/19
			Sheet No. <b>6</b>
<b>NORWICH PUBLIC UTILITIES</b>			
<b>STONY BROOK TRANSMISSION MAIN RENEWAL</b>			
SITE PLAN 5			

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- SUGGESTED SEQUENCE OF WATER INSTALLATION WORK 'DRY' CONNECTION**
1. PERFORM TEST PIT TO CONFIRM LOCATION AND DEPTH OF EXISTING FORCE MAIN PRIOR TO CONSTRUCTION.
  2. INSTALL, PRESSURE TEST AND DISINFECT ALL NEW WATER MAIN PIPING.
  3. INSTALL TEMPORARY WATER SERVICE FOR #255, #254 LEFFINGWELL ROAD AND TRAILER PARK
  4. CLOSE EXISTING GATE VALVE 40-004 AT BIG-Y
  5. CLOSE EXISTING GATE VALVE 40-001 ON LEFFINGWELL ROAD
  6. MAKE CONNECTION TO EXISTING 24" WATER MAIN ON LEFFINGWELL ROAD.
  7. INSTALL AND TRANSFER NEW SERVICES TO #255, #254 LEFFINGWELL ROAD AND TRAILER PARK
  8. CUT AND CAP 24" WATER MAIN AT LOCATIONS SHOWN AND ABANDON PIPE

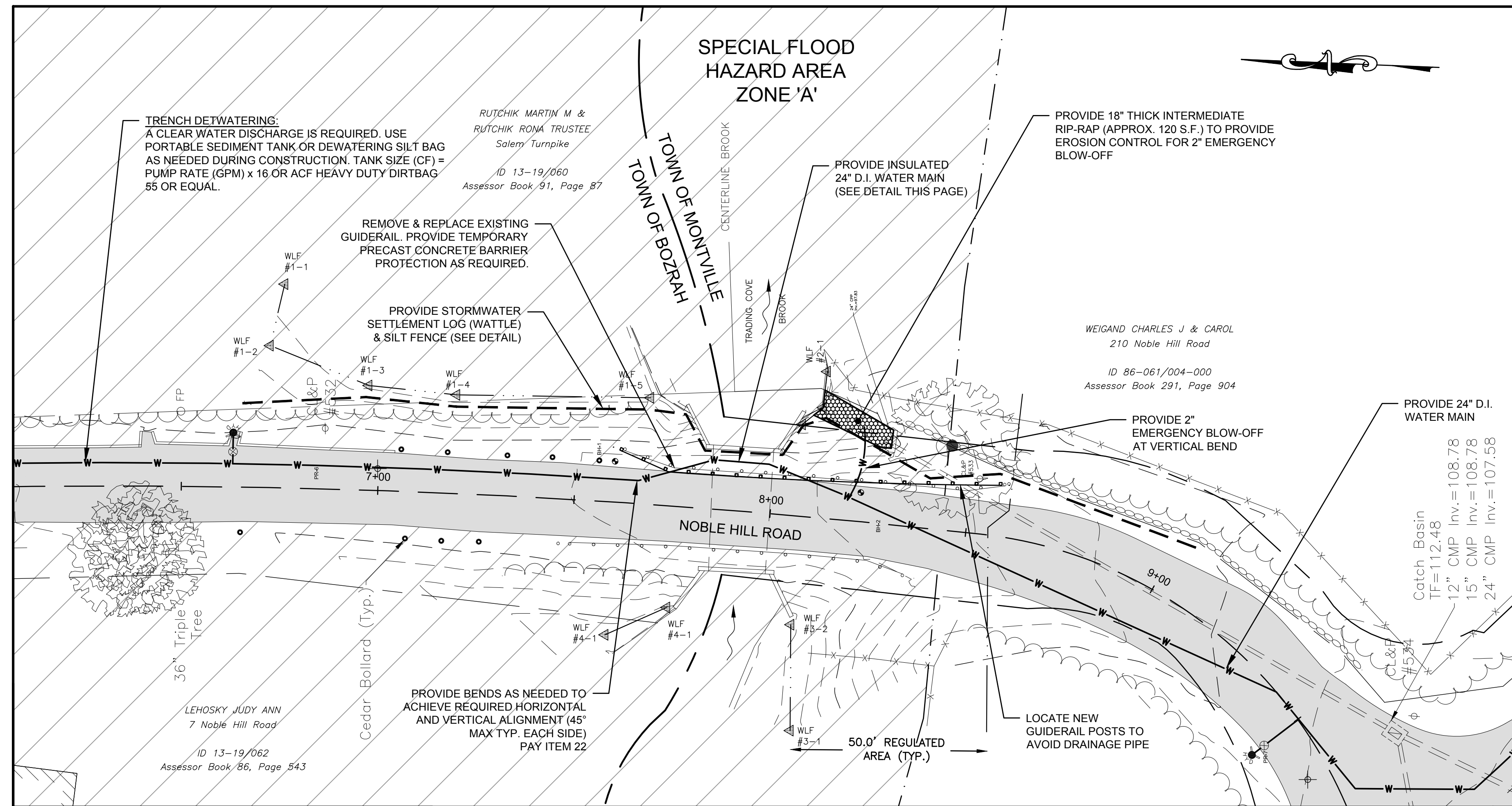
- NOTES**
1. ANY DEVIATION FROM THE ABOVE CONNECTION SEQUENCE SHALL BE SUBJECT TO APPROVAL BY THE OWNER. THE CONTRACTOR SHALL SUBMIT HIS SCHEDULE OF WORK TO THE OWNER FOR APPROVAL.
  2. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTICES TO ALL AFFECTED PROPERTY OWNERS A MINIMUM OF 48 HOURS PRIOR TO TRANSITION TO THE TEMPORARY WATER SYSTEM.
  3. ALL WATER MAIN WORK SHALL BE CONSTRUCTED IN SUCH A MANNER TO MINIMIZE DISRUPTION IN FLOW TO CUSTOMER SERVICES.



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Project No. CLA-6073	Project Engineer D.P.H.	
<b>NORWICH PUBLIC UTILITIES</b>		Date: 01/14/19
<b>STONY BROOK TRANSMISSION MAIN RENEWAL</b>		Sheet No. <b>7</b>
SITE PLAN 6		

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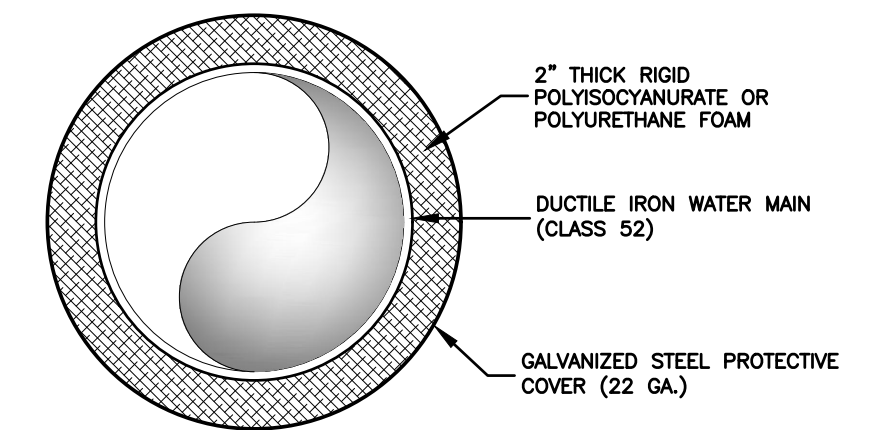
**PLAN VIEW**



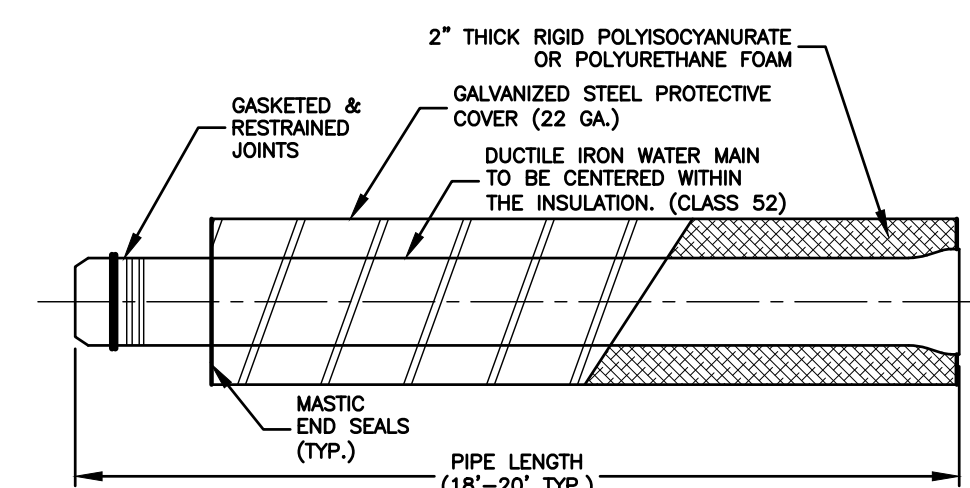
**FLOOD PLAIN MANAGEMENT**

A PORTION OF THE WORK AREA LIES WITHIN THE TRADING COVE BROOK 100-YEAR FLOOD PLAIN AND FLOODWAY

1. THERE SHALL BE NO BUOYANT, HAZARDOUS FLAMMABLE, EXPLOSIVE, SOLUBLE, EXPANSIVE, OR ANY OTHER MATERIAL WHICH COULD BE INJURIOUS TO HUMAN, ANIMAL OR PLANT LIFE STORED WITHIN THIS AREA AT ANY TIME.
2. NO STORAGE OF CONSTRUCTION EQUIPMENT AND/OR MATERIAL SHALL OCCUR WITHIN THE FLOOD PLAIN UNLESS SUCH EQUIPMENT OR MATERIAL IS NOT SUBJECT TO MAJOR FLOOD DAMAGE, IS ANCHORED, RESTRAINED OR ENCLOSED TO PREVENT IT FROM FLOATING AWAY OR IS REMOVED PRIOR TO FLOODING.
3. THE CONTRACTOR SHALL MONITOR WEATHER CONDITIONS AND RIVER ELEVATIONS. IN THE EVENT OF A PREDICTED MAJOR STORM, POTENTIAL FLOODING OR AT THE DIRECTION OF THE OWNER OR ENGINEER, THE CONTRACTOR MUST REMOVE EQUIPMENT AND LOOSE MATERIALS FROM THE FLOOD PLAIN AND SECURE THE SITE.
4. THE CONTRACTOR SHALL MAKE PROVISIONS FOR AND SHALL BE SOLELY RESPONSIBLE FOR SECURING THE WORK IN PROGRESS AND ANY MATERIAL STOCKPILES PRIOR TO A MAJOR STORM.
5. THE CONTRACTOR SHALL SUBMIT A WRITTEN FLOOD CONTINGENCY PLAN TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.



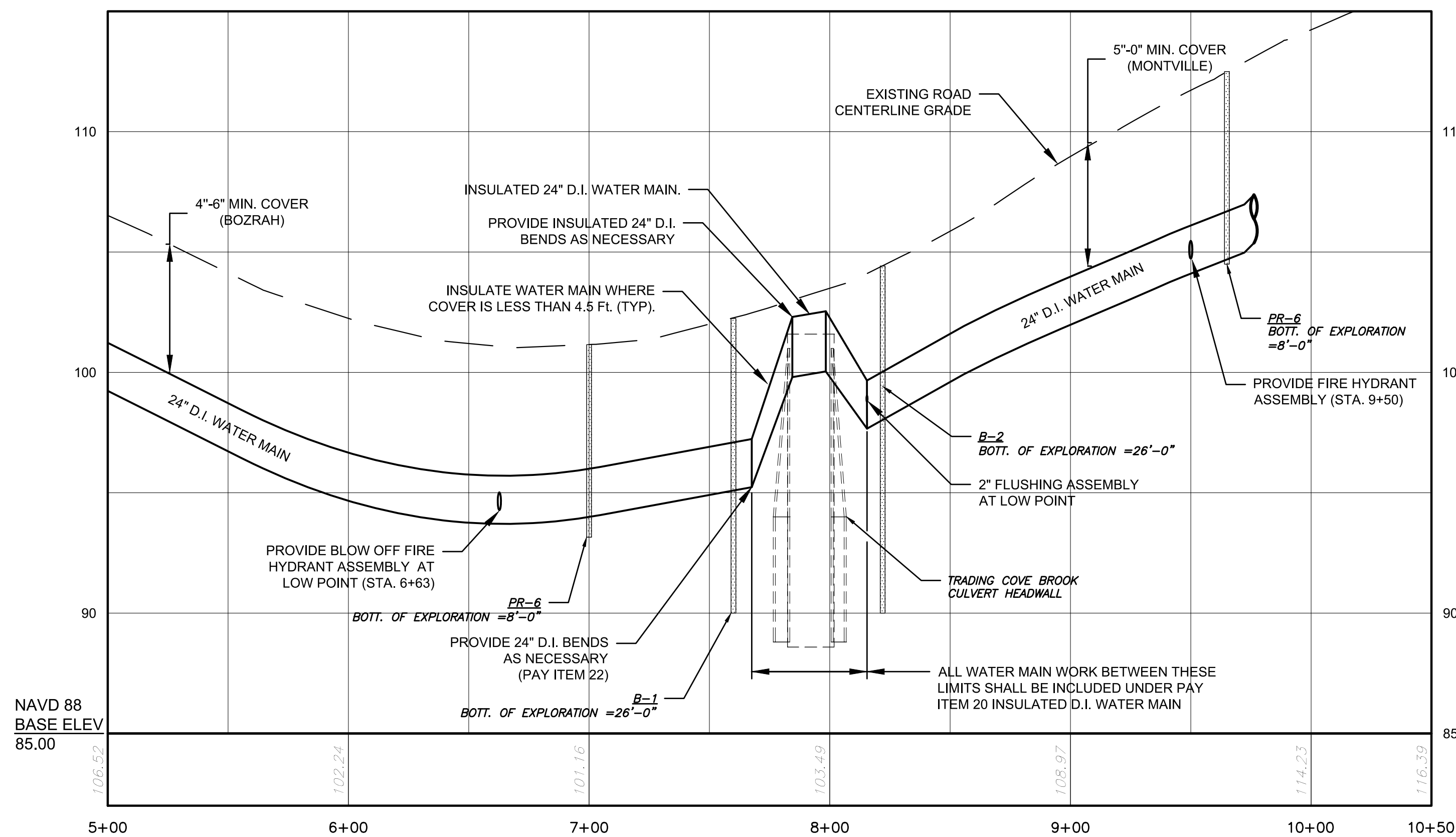
**TYPICAL END VIEW**



**TYPICAL SECTION VIEW**

- NOTES:**
1. INSULATION SYSTEM TO BE MANUFACTURED BY URECON, TRICON PIPING SYSTEMS, OR APPROVED EQUAL.
  2. INSULATION AND PROTECTIVE COVER TO BE CONTINUOUS THROUGH BENDS AND FITTINGS.
  3. TO BE USED AT THE TRADING COVE BROOK CROSSING WHERE COVER IS LESS THAN 4.5 FEET IN ANY DIRECTION.

**INSULATED WATER MAIN DETAIL**  
NOT TO SCALE

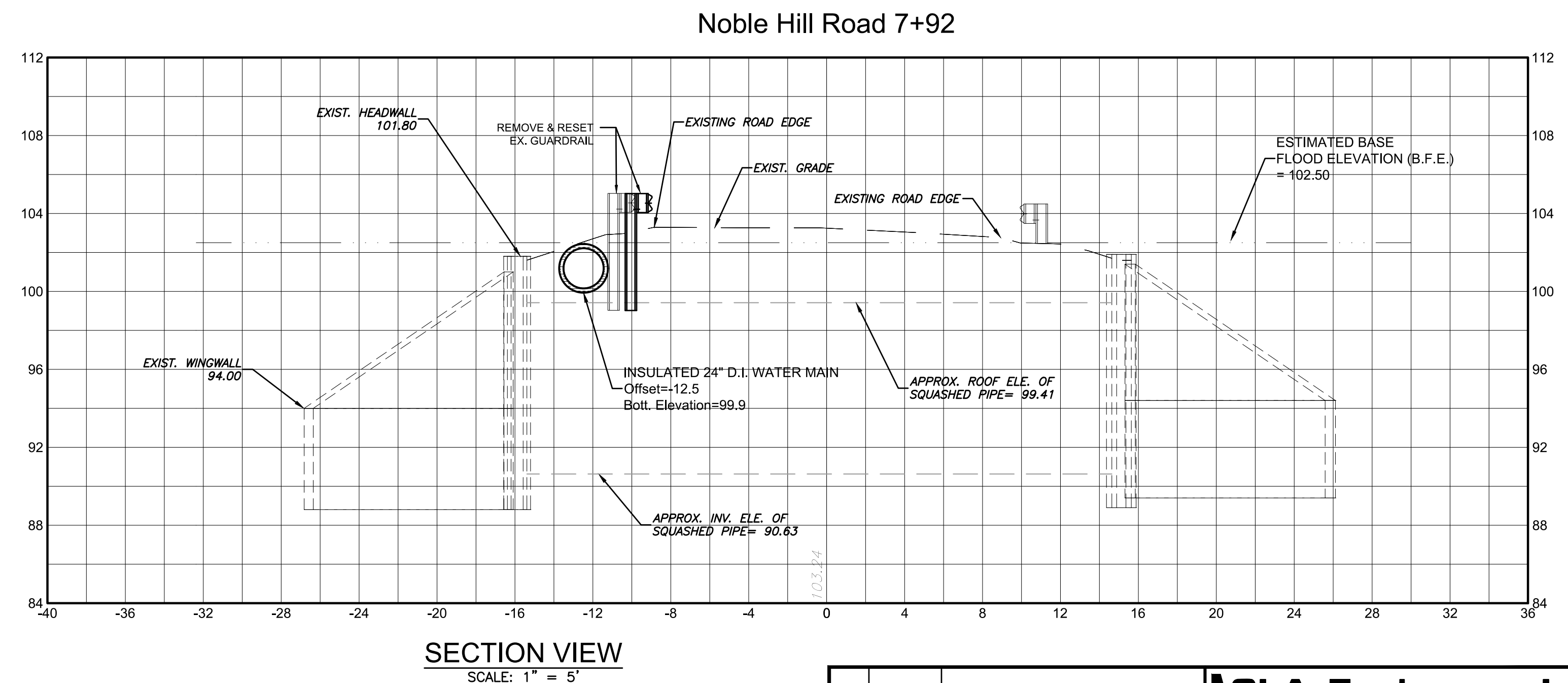


**PROFILE VIEW - NOBLE HILL ROAD**

Sta. 5+00 to Sta. 10+50

Horiz. Scale: 1" = 40'

Vert. Scale: 1" = 4'



**SECTION VIEW**

SCALE: 1" = 5'

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<b>NORWICH PUBLIC UTILITIES</b> <b>STONY BROOK</b> <b>TRANSMISSION MAIN RENEWAL</b> TRADING COVE BROOK CONSTRUCTION PLAN		Project No. CLA-6073 Proj. Engineer D.P.H Date: 01/14/19 Sheet No. <b>8</b>

No.	DATE	REVISION
2	04/01/19	ISSUED FOR BID
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**EROSION & SEDIMENTATION CONTROL NARRATIVE:**

1. THE EROSION & SEDIMENTATION CONTROL PLAN AND DETAILS HAVE BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEP.
2. THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL MEASURES ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROVIDE SILT FENCE, STONE CHECK DAMS AND/OR OTHER EROSION CONTROL MEASURES AS NEEDED OR DIRECTED BY THE ENGINEER OR TOWN STAFF TO ADEQUATELY PREVENT SEDIMENT TRANSPORT.
3. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE.
4. THE CONTRACTOR SHALL INSPECT, REPAIR AND/OR REPLACE EROSION CONTROL MEASURES EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.
5. STAKED HAY BALE SILT BARRIERS OR SILT FENCE SHALL BE INSTALLED AROUND ANY TEMPORARY STOCKPILE AREAS. TEMPORARY VEGETATIVE COVER MAY BE REQUIRED (SEE NOTE).
6. INLET SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED UNDER THE GRATES OF ALL NEW CATCH BASINS AT THE TIME OF INSTALLATION, AND UNDER THE GRATES OF EXISTING CATCH BASINS IN THE CONSTRUCTION AREA.
7. CONTINUOUS DUST CONTROL USING WATER, CALCIUM CHLORIDE OR APPROVED EQUAL SHALL BE PROVIDED FOR ALL EARTH STOCKPILES, EARTH PILED ALONG EXCAVATIONS, SURFACES OF BACKFILLED TRENCHES AND GRAVELED ROADWAY SURFACES.
8. IF DEWATERING IS NECESSARY DURING ANY TIME OF CONSTRUCTION A CLEAR WATER DISCHARGE SHALL BE PROVIDED AS SHOWN IN THE HAY-BALE BARRIER DEWATERING DETAIL OR ALTERNATE METHOD PROPOSED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
9. ALL DISTURBED AREAS SHALL BE RESTORED PER THE SLOPE STABILIZATION AND PERMANENT VEGETATION DETAILS. ALL DISTURBED AREAS THAT ARE SLOPED LESS THAN THREE HORIZONTAL TO ONE VERTICAL (3:1) SLOPE SHALL BE LOAMED, SEED, FERTILIZED AND MULCHED PER THE PERMANENT VEGETATIVE COVER SPECIFICATIONS. EROSION CONTROL MATTING SHALL BE PROVIDED ON ALL DISTURBED AREAS THAT ARE SLOPED MORE THAN THREE HORIZONTAL TO ONE VERTICAL (3:1).
10. IF FINAL SEEDING OF DISTURBED AREAS IS NOT TO BE COMPLETED BEFORE OCTOBER 15, THE CONTRACTOR SHALL PROVIDE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY PERMANENT SEEDING.
11. WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISHED GRADED SHALL BE COMPLETED PRIOR TO OCTOBER 15.
12. ANY EROSION WHICH OCCURS WITHIN THE DISTURBED AREAS SHALL BE IMMEDIATELY REPAIRED AND STABILIZED. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT SHALL BE RETURNED TO THE SITE. POST SEEDING, INTERCEPTED SEDIMENT, IF ANY, SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE TOWN AND ENGINEER.
13. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL VEGETATION IS RE-ESTABLISHED OR SLOPES ARE STABILIZED AND REMOVAL IS APPROVED BY THE TOWN.
14. UNFORESEEN PROBLEMS WHICH ARE ENCOUNTERED IN THE FIELD SHALL BE SOLVED ACCORDING TO THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEP.
15. IF NECESSARY THE PUBLIC WORKS DEPARTMENT WILL BE PREPARED TO STEP IN AND TAKE ACTION TO ADDRESS ANY POTENTIAL EROSION PROBLEMS. ANY WORK DONE BY THE PUBLIC WORKS DEPARTMENT WILL BE BACK CHARGED TO THE CONTRACTOR.
16. THE CONTRACTOR SHALL PROVIDE THE NAME AND CONTACT INFORMATION FOR THE PROJECT PERSONNEL RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROLS.

NOTE: THE CONTRACTOR SHALL CONTINUALLY STORE THE FOLLOWING MATERIALS ONSITE DURING CONSTRUCTION TO MEET UNEXPECTED EROSION NEEDS

- \* 100 LF OF SILT FENCE
- \* 10 HAY BALES
- \* WOOD CHIPS OR CRUSHED STONE

**TEMPORARY VEGETATIVE COVER**

A TEMPORARY SEEDING OF RYE GRASS WILL BE COMPLETED WITHIN 15 DAYS OF THE FORMATION OF STOCKPILES. IF THE SOIL IN THE STOCKPILES HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS IT SHALL BE LOOSENED TO A DEPTH OF 2 INCHES BEFORE THE FERTILIZER, LIME AND SEED IS APPLIED. 10-10-10 FERTILIZER AT A RATE OF 7.5 POUNDS PER 1000 S.F. LIMESTONE AT A RATE OF 90 LBS. PER 1000 S.F. SHALL BE USED. RYE GRASS APPLIED AT A RATE OF 1 LB. PER 1000 S.F. SHALL PROVIDE THE TEMPORARY VEGETATIVE COVER. STRAW, FREE FROM WEEDS AND COARSE MATTER SHALL BE USED AT A RATE OF 70-90 LBS. PER 1000 S.F. AS A TEMPORARY MULCH. APPLY MULCH AND DRIVE TRACKED EQUIPMENT UP AND DOWN SLOPE OVER ENTIRE SURFACE SO CLEAT MARKS ARE PARALLEL TO THE CONTOURS.

**PERMANENT VEGETATIVE COVER**

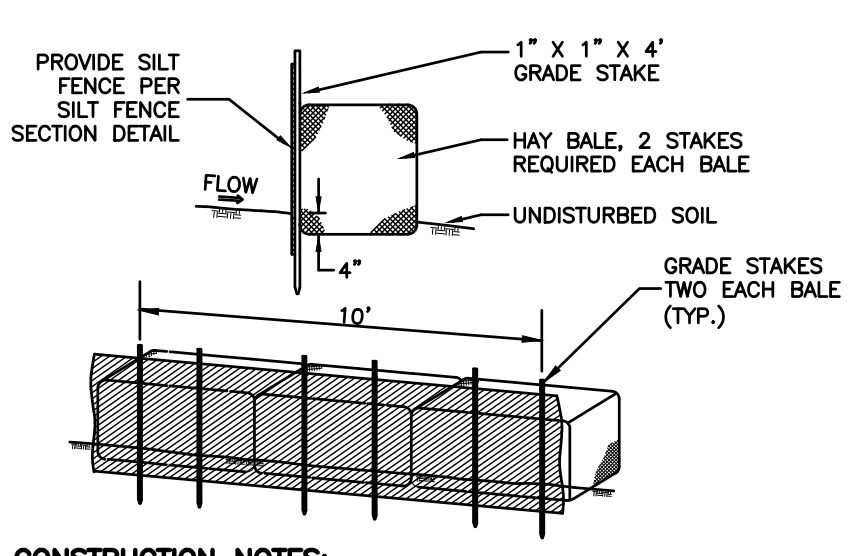
TOPSOIL WILL BE REPLACED ONCE THE EXCAVATIONS HAVE BEEN COMPLETED AND THE SLOPES ARE GRADED AS SHOWN ON THE PLANS. PROVIDE SLOPE PROTECTION AS CALLED FOR ON THE PLANS AND DETAILS. TOPSOIL SHALL BE SPREAD AT A MINIMUM COMPACTED DEPTH OF 4 INCHES. ONCE THE TOPSOIL HAS BEEN SPREAD, ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION WILL BE REMOVED AS WELL AS DEBRIS.

- APPLY AGRICULTURAL GROUND LIMESTONE AT THE RATE OF TWO TONS PER ACRE OR 100 LBS. PER 1000 S.F.
- APPLY 10-10-10 FERTILIZER OR EQUIVALENT AT A RATE OF 300 LBS. PER ACRE OR 7.5 LBS. PER S.F.
- WORK LIMESTONE AND FERTILIZER INTO THE SOIL TO A DEPTH OF 4 INCHES.
- INSPECT SEEDBED BEFORE SEEDING.
- IF TRAFFIC HAS COMPACTED THE SOIL, RETILL COMPACTED AREAS.
- APPLY THE FOLLOWING GRASS SEED MIX:

SEED MIXTURE	LBS./ACRE	LBS./1000 S.F.
2:1 SLOPES OR GREATER		
DEP SEED MIX NO. 3:		
CREeping RED FESCUE (PENNLAWN, WINTERGREEN)	20	0.45
BIRD'S FOOT TREFLOIL (EMPIRE, VIKING) W/ INOCULANT	8	0.20
TALL FESCUE (KENTUCKY 31) OR SMOOTH BROMEGRASS (SARATOGA, LINCOLN)	20	0.45
	45	1.00
REMAINDER OF DISTURBED AREAS		
KENTUCKY BLUEGRASS	75	1.72
CREeping RED FESCUE	75	1.72
PERENNIAL RYEGRASS	25	0.58
	175	4.00

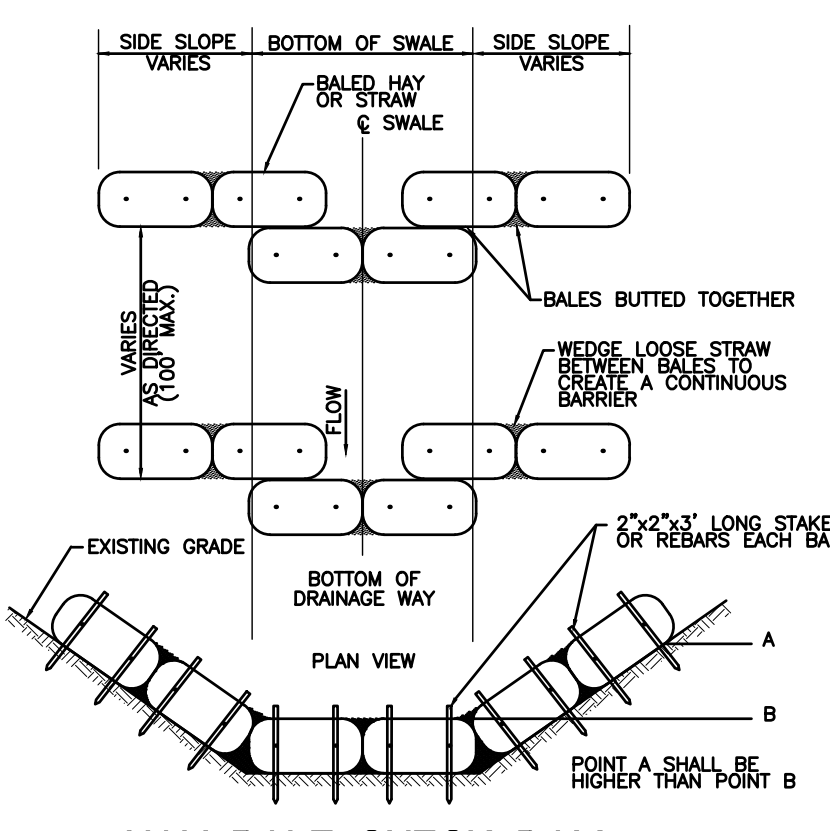
THE RECOMMENDED SEEDING DATES ARE:  
APRIL 1 - JUNE 15 AND AUGUST 15 - OCTOBER 15

IMMEDIATELY FOLLOWING SEEDING, FIRM SEED BED WITH A ROLLER AND MULCH WITH WEED FREE STRAW. IF PERMANENT VEGETATIVE COVER IS HAS NOT BEEN ESTABLISHED BY SEPTEMBER 30, APPLY A TEMPORARY VEGETATIVE COVER ON THE TOPSOIL.

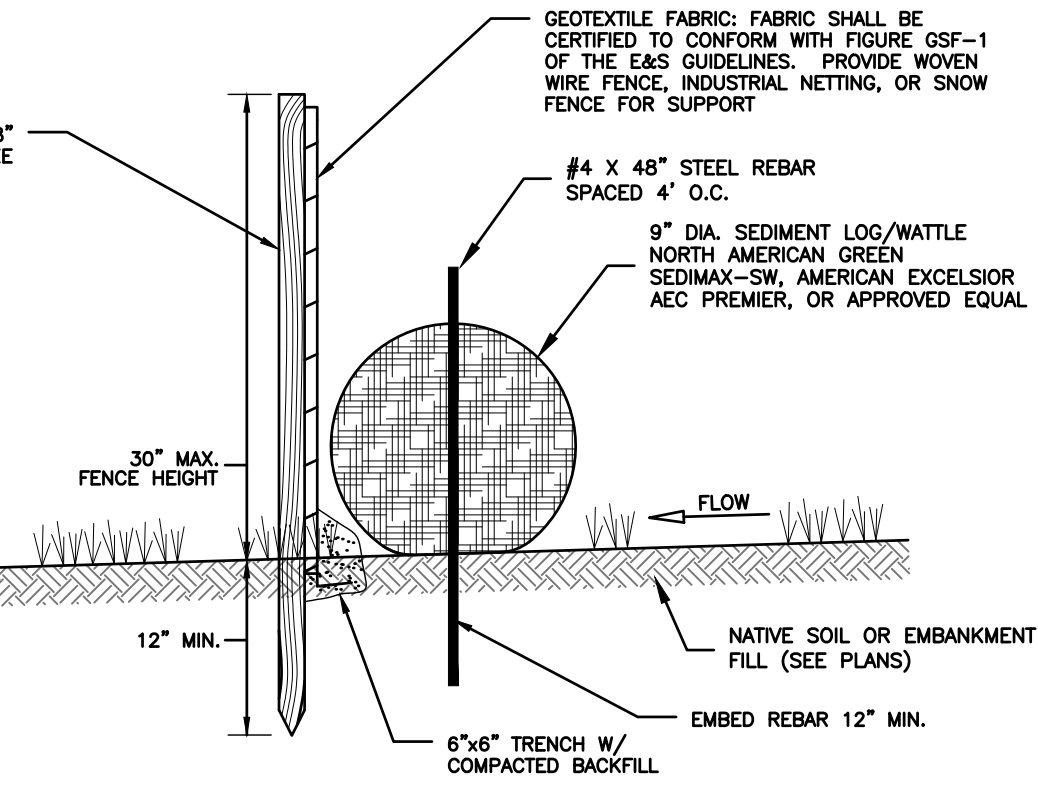


- CONSTRUCTION NOTES:**
1. SILT FENCE FILTER CLOTH TO BE SECURELY FASTENED TO GRADE STAKE WITH STAPLES, 6" ON CENTER.
  2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN ONE ANOTHER THEY SHALL OVERLAP BY 6" AND BE FOLDED.
  3. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.

**HAY BALE/SILT FENCE EROSION PROTECTION**  
NOT TO SCALE

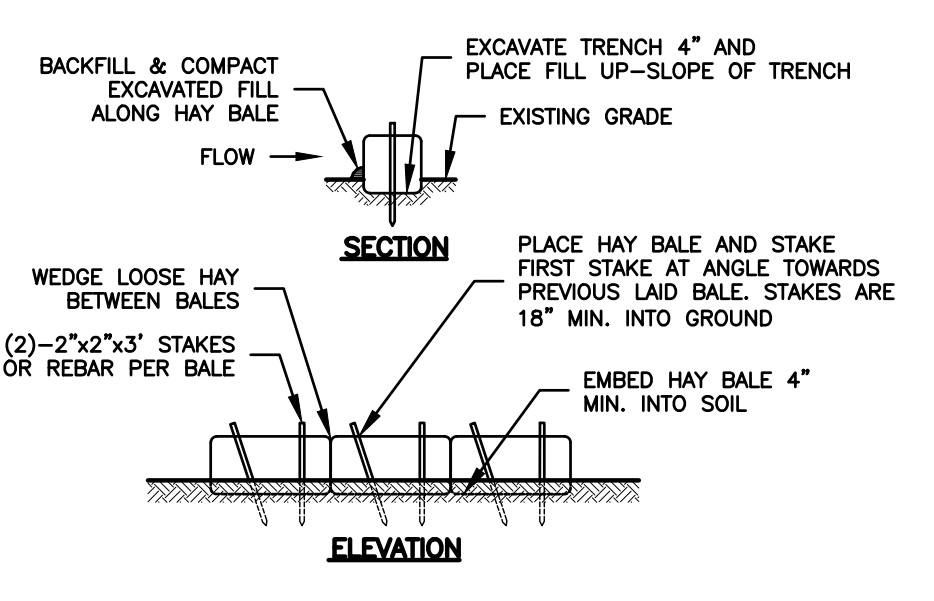


**HAY BALE CHECK DAM**  
NOT TO SCALE

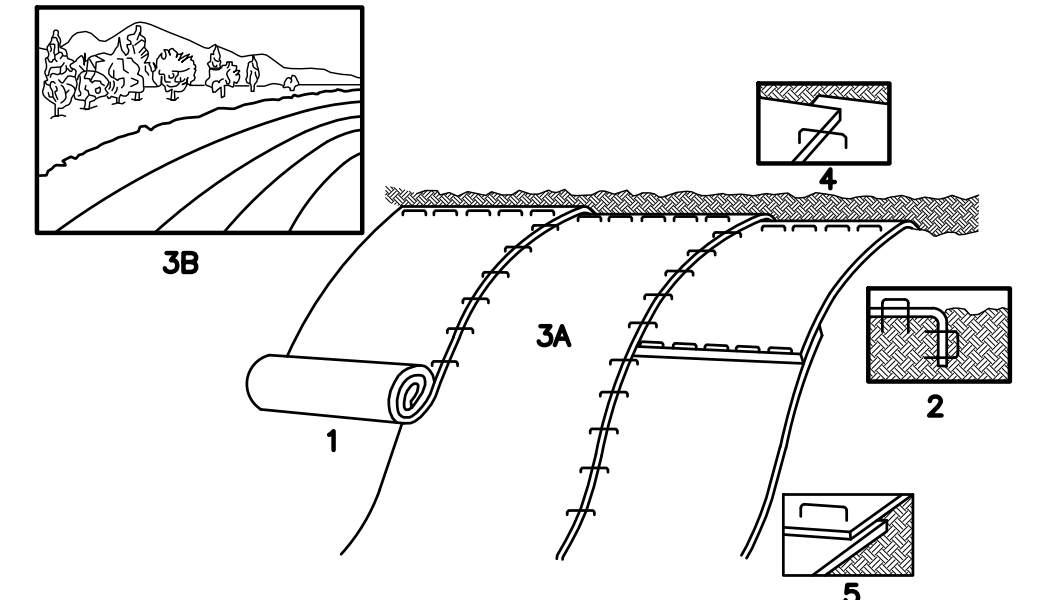


- NOTES:**
1. STORMWATER LOG ENDS SHALL BE TIED TOGETHER, OVERLAPPED AT LEAST 24" OR BE SECURED AS RECOMMENDED BY THE MANUFACTURER.

**COMBINED SILT FENCE & WATTLE SECTION**  
NOT TO SCALE

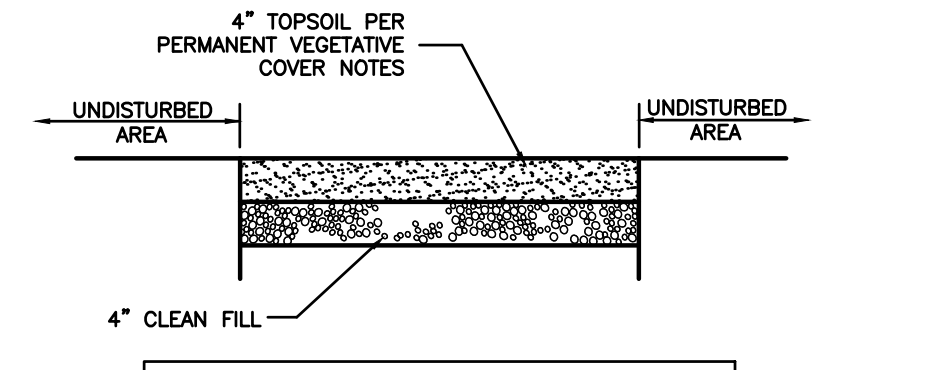


**HAY BALE BARRIER DETAIL**  
NOT TO SCALE



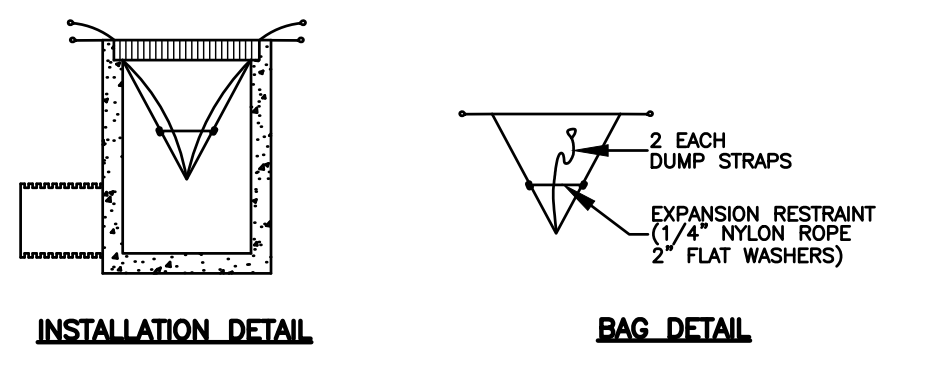
1. PROVIDE 4" THICKNESS OF TOPSOIL OVER CLEAN FILL. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED MIX PER PERMANENT VEGETATIVE COVER NOTES. (SHALL BE PAID FOR AT THE UNIT PRICE FOR LOAM, SEED, FERTILIZER & MULCH)
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP x 6" WIDE TRENCH, BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKET (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

**EROSION CONTROL MATTING DETAIL (FOR SLOPES GREATER THAN 3:1)**

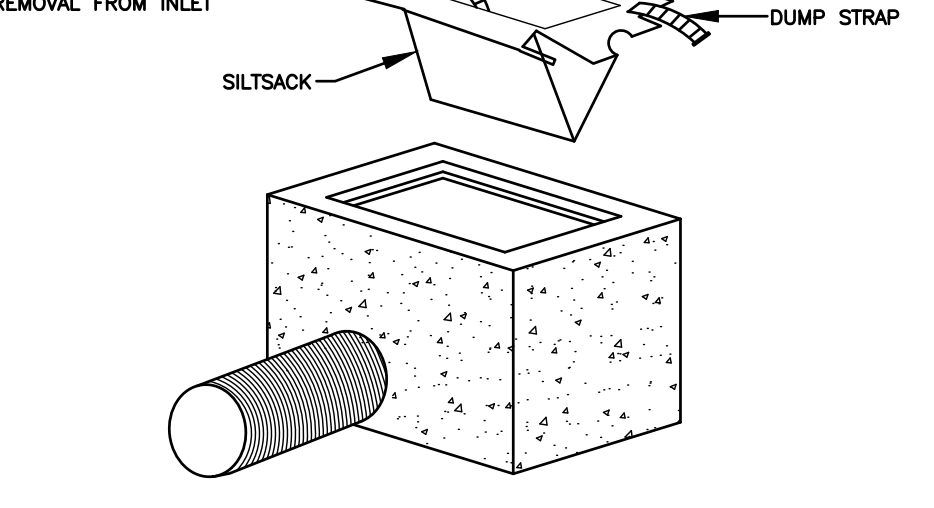


**TYPICAL LOAM & SEED SECTION DETAIL (FOR ALL DISTURBED AREAS)**

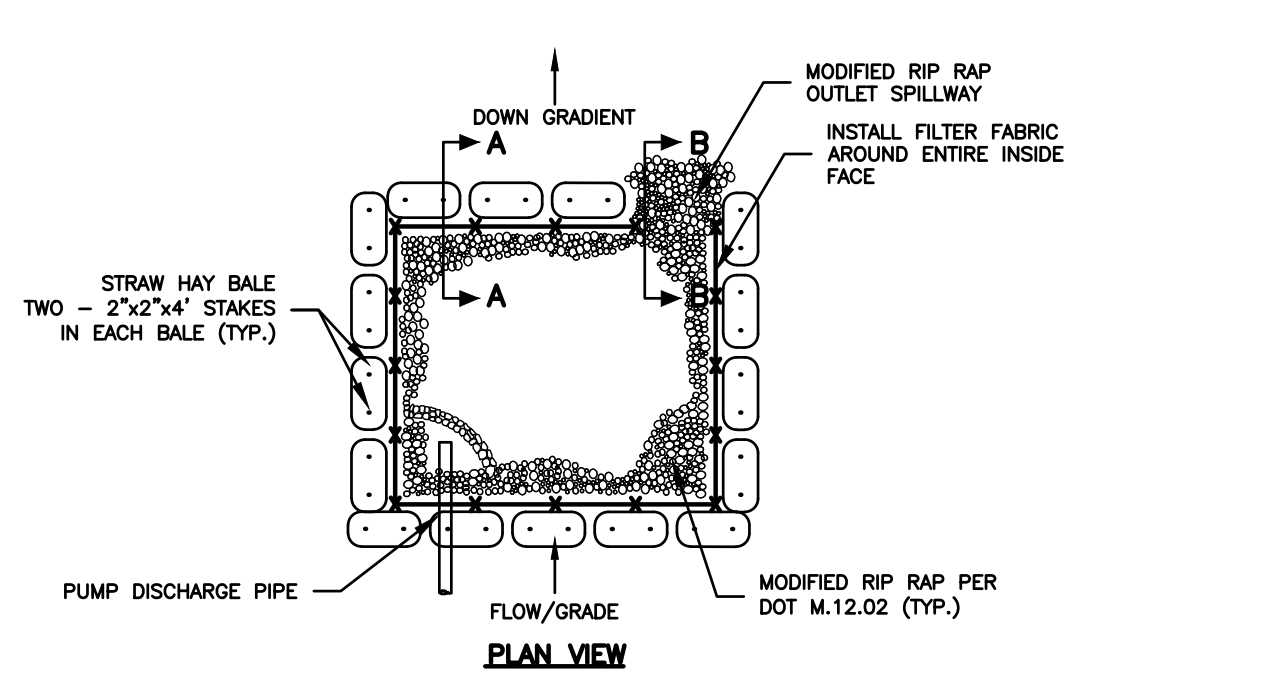
**SLOPE STABILIZATION DETAILS**  
NOT TO SCALE



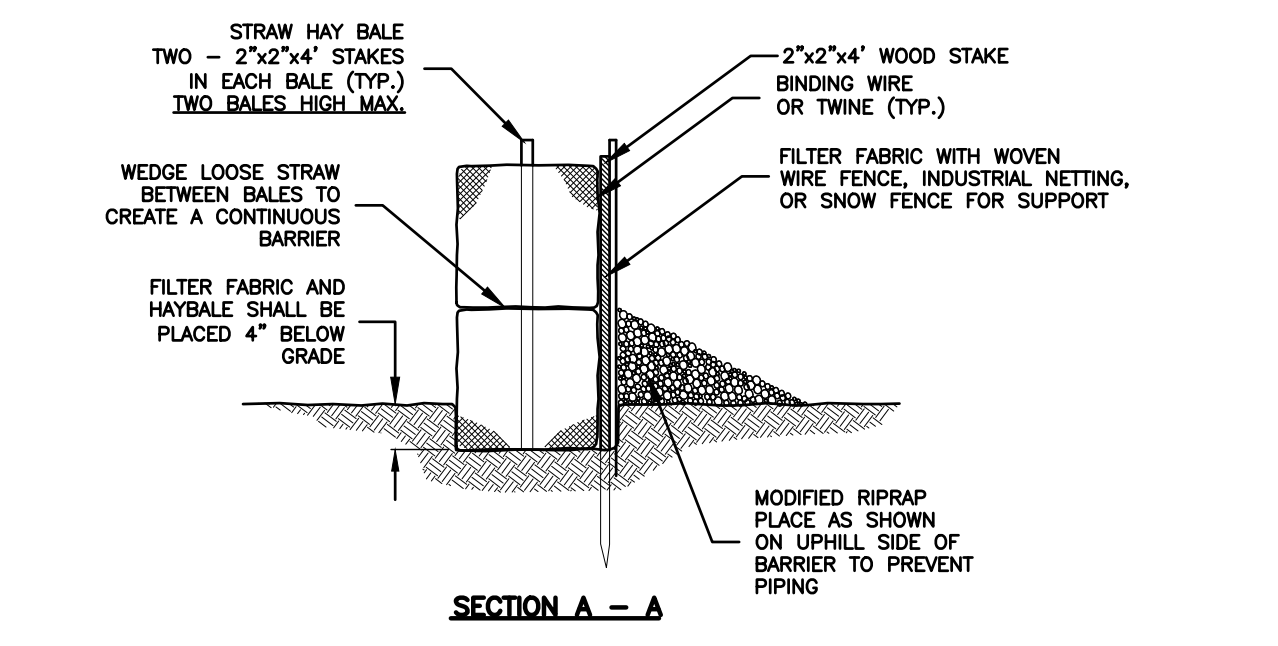
**INSTALLATION DETAIL**      **BAG DETAIL**



**INLET SEDIMENT CONTROL DEVICE DETAIL**  
NOT TO SCALE



**SECTION A - A**



**SECTION B - B**

- CONSTRUCTION NOTES:**
1. SILT FENCE FILTER CLOTH TO BE SECURELY FASTENED TO GRADE STAKE WITH STAPLES, 6" ON CENTER.
  2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN ONE ANOTHER THEY SHALL OVERLAP BY 6" AND BE FOLDED.
  3. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.

- DEWATERING PLAN**
- A CLEAR WATER DISCHARGE SHALL BE PROVIDED AS FOLLOWS:
1. PUMP INLET SHALL BE PROTECTED WITH FILTER FABRIC & CRUSHED STONE.
  2. PUMP SHALL BE STAGED OUTSIDE OF WETLANDS.
  3. THE WATER SHALL BE PUMPED TO A DEWATERING STRUCTURE WHICH SHALL BE LOCATED AT LEAST 50 FEET FROM ANY REGULATED WETLAND AREA OR AS SHOWN ON THE PLANS.
  4. THE DEWATERING STRUCTURE SHALL BE SIZED TO ACCOMMODATE PUMP DISCHARGE RATE:  $REQUIRED\ VOLUME\ (G.F.) = PUMP\ DISCHARGE\ (G.P.M.) \times 16$
  5. THE DEWATERING STRUCTURE SHALL DISCHARGE TO A VEGETATED AREA.
  6. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN AND PROPERLY DISPOSED OF WHEN ACCUMULATION REACHES HALF OF THE REQUIRED STORAGE VOLUME.
  7. DEWATERING AREA SHALL BE RESTORED WITH NEW ENGLAND EROSION CONTROL SEED MIX.

**HAY BALE BARRIER DE-WATERING DETAIL**  
NOT TO SCALE

		<p><b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING</p> <p>317 Main Street Norwich, CT 06360 (860) 886-1986 Fax (860) 886-9165</p>	
2	04/01/19		
1	01/25/19	MISCELLANEOUS REVISIONS	
No.	DATE	REVISION	
<p>NORWICH PUBLIC UTILITIES</p> <p><b>STONY BROOK TRANSMISSION MAIN RENEWAL</b></p> <p>SEDIMENT &amp; EROSION CONTROL PLAN</p>			<p>Project No. CLA-6073</p> <p>Proj. Engineer D.P.H</p> <p>Date: 01/14/19</p> <p>Sheet No. <b>9</b></p>

**GENERAL NOTES**

- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS.
- EXISTING PROPERTY LINES AND RIGHT-OF-WAY LINES WHERE SHOWN ARE APPROXIMATE AND ARE INTENDED FOR GENERAL INFORMATION ONLY.
- GROUND LINE AS SHOWN ON THESE PLANS IS BASED ON FIELD SURVEY.
- CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT 1-800-922-4455 AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- INFORMATION SHOWN ON THE DRAWINGS RELATING TO MATERIALS, CONDITIONS, AND/OR LOCATIONS OF EXISTING STRUCTURES AND UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING FIELD SURVEY, UTILITY COMPANY AND TOWN RECORD MAPS AND DRAWINGS, AND IS NOT GUARANTEED ACCURATE OR COMPLETE. ALL UTILITIES SHALL BE LOCATED IN THE FIELD BY THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER WARRANTS OR GUARANTEES THE CONDITIONS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL EXCAVATE TEST PITS AS NEEDED OR AS DIRECTED BY THE OWNER TO VERIFY EXISTING UTILITY INFORMATION AND LOCATIONS.
- PASSAGE OF TRAFFIC ON ROADWAYS: SINGLE LANE TRAFFIC SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL PERFORM OPERATIONS TO MINIMIZE DISRUPTIONS TO TRAFFIC WITHIN THE PROJECT SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF TRAFFIC, TRAFFIC CONTROL, TEMPORARY SIGNING OR BARRICADES AND LANE CLOSURES. CONTINUOUS ACCESS FOR BUSES AND EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF TRAFFIC AND TRAFFIC CONTROL.
- CONSTRUCTION SIGNS MUST CONFORM TO THE SIGNING REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)". ALL SIGN FACES SHALL BE REFLECTORIZED.
- ALL PROPOSED WORK MAY BE VARIED IN THE FIELD BY THE OWNER TO MATCH EXISTING CONDITIONS.
- THE CONTRACTOR SHALL CONFINE OPERATIONS AND ACTIVITIES FOR CONSTRUCTION PURPOSES WITHIN THE STREET LINES AND/OR EASEMENTS AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING PAVEMENT, ROADWAY, SIDEWALKS, ETC., OUTSIDE OF THE WORK AREA AND SHALL REPAIR SUCH DAMAGE AT NO ADDITIONAL COST TO THE OWNER.
- UPON COMPLETION OF THE WORK, ALL DISTURBED AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION.
- ALL STREET SIGNS, MAILBOXES, PLANTINGS, ORNAMENTAL OBJECTS, LIGHTS, LANDSCAPE SHRUBBERY, ETC., SHALL BE PROTECTED FROM DAMAGE AND SHALL BE REPLACED IN THE SAME OR BETTER CONDITION BY THE CONTRACTOR IF DISTURBED OR DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION.
- RESIDENTS WITH DRIVES AFFECTED BY CONSTRUCTION SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 48 HOURS BEFORE CONSTRUCTION BEGINS AND SHALL BE ALLOWED ACCESS TO THEIR PROPERTY.
- THE CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS WHICH SHALL BE SUBMITTED TO THE ENGINEER AT COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTING TO GRADE ALL FRAMES, GRATES, COVERS, VALVE BOXES, ACCESS COVERS, AND ALL OTHER ITEMS WHICH NORMALLY MUST HAVE A FIXED RELATION TO FINISHED GRADE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY AND PERMANENT SUPPORT OF ALL EXISTING UTILITY POLES IN AN ADJACENT TO THE CONSTRUCTION AREA AND SHALL COMPLY WITH ALL THE REQUIREMENTS AND SPECIAL DETAILS FOR THE SUPPORT OF UTILITIES REQUIRED BY UTILITY AGENCIES. ALL COSTS FOR TEMPORARILY SUPPORTING UTILITY POLES DURING CONSTRUCTION SHALL BE INCLUDED IN OTHER ITEMS.
- IF BLASTING IS PERFORMED A PRE-BLAST SURVEY WILL BE REQUIRED. ANY AND ALL BLASTING SHALL CONFORM TO THE REGULATIONS SET FORTH BY THE TOWN AND SHALL BE APPROVED BY THE APPROPRIATE TOWN AGENCIES AND ADJACENT UTILITY OWNERS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEY AND STAKEOUT AS NEEDED. SURVEY BASE INFORMATION AND LAYOUT WILL BE PROVIDED TO THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
- MATERIAL STOCKPILE AND STAGING AREAS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING STOCKPILE, MATERIAL STORAGE AND EQUIPMENT STORAGE AREAS. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL IDENTIFY THESE AREAS AND PROVIDE EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED.
- DISPOSAL OF CONSTRUCTION MATERIALS: CONTRACTOR IS ADVISED TO PAY PARTICULAR ATTENTION TO PROVISIONS OF SPECIAL CONDITIONS OF THE SPECIFICATIONS IN PREPARATION OF HIS BID. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL BE REQUIRED TO IDENTIFY ALL LOCATIONS WITHIN THE TOWN TO BE USED FOR DISPOSAL OF UNSUITABLE CONSTRUCTION MATERIALS.
- CLEARING AND GRUBBING: ALL TREES, BRUSH, VEGETATION, ETC. SHALL BE CUT DOWN BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL GIVE ABUTTING PROPERTY OWNERS THE OPPORTUNITY TO TAKE CUT WOOD FOR THEIR PRIVATE USE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ALL REMAINING STUMPS, CUT-UP TREES & LIMBS, ETC. WITHIN THE CONTRACT LIMITS. THE CONTRACTOR SHALL PROTECT REMAINING TREES FROM DAMAGE DURING CONSTRUCTION. TREES UNNECESSARILY CUT OR DAMAGED BY THE CONTRACTOR'S FORCES SHALL BE REPLACED, OF COMPARABLE SIZE AND TYPE, BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- PERMANENT PAINTED PAVEMENT MARKINGS SHALL CONFORM WITH ARTICLE 12.09 OF THE DOT FORM 817 SPECIFICATIONS.
- ALL WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION FORM 817, DATED JULY 2017, AS REVISED.

SINGLE PIPE TRENCHES	
PIPE DIAMETER	TRENCH WIDTH
<4"	2'-0"
4"-6"	2'-6"
8"	3'-0"
10"	3'-0"
12"	3'-0"
15"	3'-6"
16"	3'-6"
18"	3'-6"
21"	4'-0"
24"	4'-6"

ALL EXCAVATED TRENCH WIDTHS, AND MEANS AND METHODS FOR EXCAVATION AND SHORING SHALL CONFORM TO ALL OSHA REQUIREMENTS. THE TRENCH WIDTHS STATED ARE MINIMUMS AND ARE TO ESTABLISH PAY LIMITS FOR THE VARIOUS PIPES INSTALLED.

**TRENCH WIDTH TABLE**

**SUGGESTED CONSTRUCTION SEQUENCE**

- CONTACT "CALL BEFORE YOU DIG" AT 811 AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- PROVIDE EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE PLANS OR AS DIRECTED BY THE OWNER IN THE FIELD.
- EXCAVATE TEST HOLES IN THE LOCATIONS CALLED FOR ON THE PLANS AND DETAILS AND AT ADDITIONAL LOCATIONS AS NEEDED.
- INSTALL THE WATER MAIN AND APPURTENANCES AS CALLED FOR ON THE PLANS. THE CONTRACTOR MAY START WORK AT EITHER END OF THE PROJECT, AS THEY SEE FIT. SOURCE WATER FOR FLUSHING, DISINFECTION, AND PRESSURE TESTING SHALL BE SUPPLIED FROM THE NORWICH WATER SYSTEM.
- TEMPORARILY PAVE THE TRENCHES AT THE END OF EACH WORK DAY. PROVIDE TEMPORARY PAINTED PAVEMENT MARKINGS FOR MARKINGS DISTURBED DURING CONSTRUCTION. PROCESSED GRAVEL MUST BE INSTALLED WITH THE TEMPORARY PAVEMENT.
- PRESSURE TEST & DISINFECT NEW WATER MAIN IN ACCORDANCE WITH THE PROJECT MANUAL & SPECIFICATIONS. THE CONTRACTOR MAY PRESSURE TEST AND DISINFECT SECTIONS OF PIPING AS APPROPRIATE TO BRING PORTIONS OF THE NEW WORK ONLINE THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A SEQUENCING OF OPERATIONS AND PHASING PLAN PRIOR TO CONSTRUCTION. APPROVAL FROM THE OWNER AND DEPARTMENT OF HEALTH IS REQUIRED PRIOR TO MAKING CONNECTION TO THE NPU WATER SYSTEM AND ANY CUSTOMER SERVICE CONNECTIONS.
- INSTALL THE CUSTOMER SERVICE CONNECTIONS AND STUBS AS CALLED FOR ON THE PLANS AND AS DIRECTED BY THE OWNER.

**FINAL RESTORATION:**

- PROVIDE PERMANENT PAVEMENT ON ALL TRENCHES WITHIN THE WORK AREA.
- REPAIR CURB, DRIVEWAYS, SIDEWALKS AND LAWNS DISTURBED DURING CONSTRUCTION.
- MILL AND OVERLAY THE TRAFFIC LANES AS CALLED FOR ON THE PLANS.
- PROVIDE PERMANENT EPOXY RESIN PAVEMENT MARKINGS.

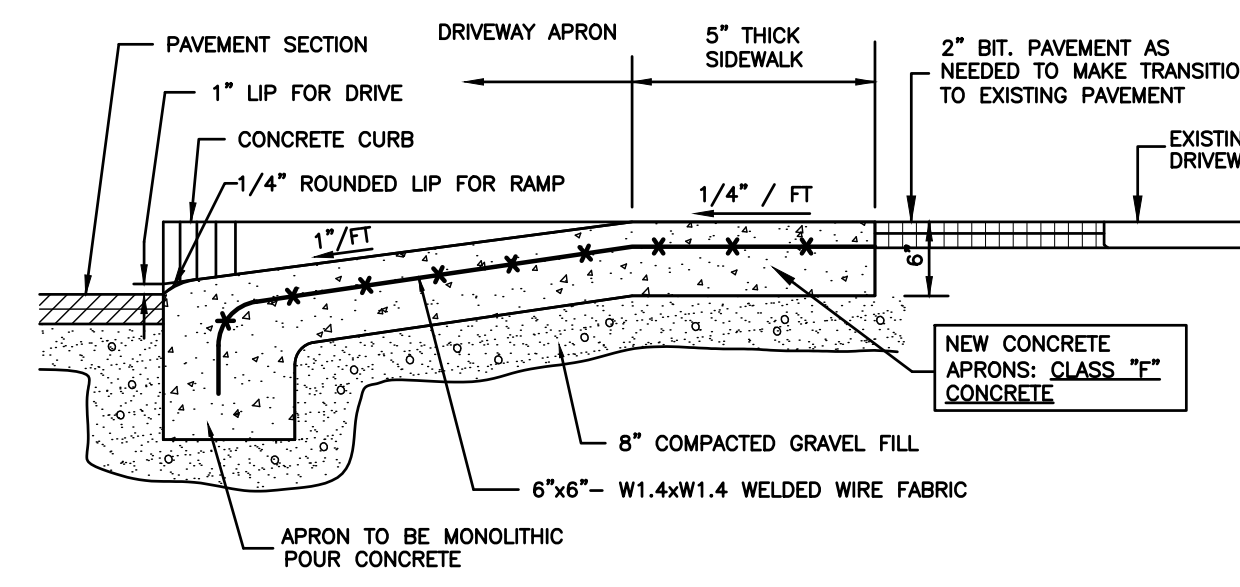
**FLOOD PLAIN MANAGEMENT**

A PORTION OF THE WORK AREA LIES WITHIN THE TRADING COVE BROOK 100-YEAR FLOOD PLAIN AND FLOODWAY

- THERE SHALL BE NO BUOYANT, HAZARDOUS FLAMMABLE, EXPLOSIVE, SOLUBLE, EXPANSIVE, OR ANY OTHER MATERIAL WHICH COULD BE INJURIOUS TO HUMAN, ANIMAL OR PLANT LIFE STORED WITHIN THIS AREA AT ANY TIME.
- NO STORAGE OF CONSTRUCTION EQUIPMENT AND/OR MATERIAL SHALL OCCUR WITHIN THE FLOOD PLAIN UNLESS SUCH EQUIPMENT OR MATERIAL IS NOT SUBJECT TO MAJOR FLOOD DAMAGE, IS ANCHORED, RESTRAINED OR ENCLOSED TO PREVENT IT FROM FLOATING AWAY OR IS REMOVED PRIOR TO FLOODING.
- THE CONTRACTOR SHALL MONITOR WEATHER CONDITIONS AND RIVER ELEVATIONS. IN THE EVENT OF A PREDICTED MAJOR STORM, POTENTIAL FLOODING OR AT THE DIRECTION OF THE OWNER OR ENGINEER, THE CONTRACTOR MUST REMOVE EQUIPMENT AND LOOSE MATERIALS FROM THE FLOOD PLAIN AND SECURE THE SITE.
- THE CONTRACTOR SHALL MAKE PROVISIONS FOR AND SHALL BE SOLELY RESPONSIBLE FOR SECURING THE WORK IN PROGRESS AND ANY MATERIAL STOCKPILES PRIOR TO A MAJOR STORM.
- THE CONTRACTOR SHALL SUBMIT A WRITTEN FLOOD CONTINGENCY PLAN TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.

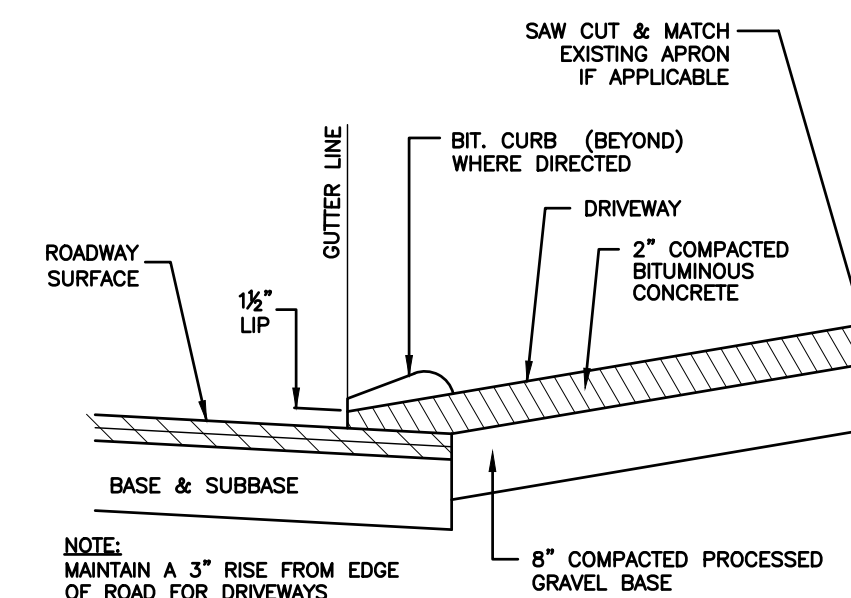
ITEM	PAYMENT WIDTH TABLE
SUBSTITUTE MATERIAL (GRAVEL FILL OR CRUSHED STONE AS DIRECTED BY OWNER)	TRENCH WIDTH (SEE TRENCH WIDTH TABLE)
ROCK EXCAVATION	TRENCH WIDTH (SEE TRENCH WIDTH TABLE)
TRENCH EXCAVATION IN EXCESS OF DESIGN DEPTH	TRENCH WIDTH (SEE TRENCH WIDTH TABLE)
PROCESSED GRAVEL BASE	TRENCH WIDTH PLUS 2 FEET
PROCESSED GRAVEL SUB-BASE	TRENCH WIDTH PLUS 2 FEET
TEMPORARY PAVEMENT TRENCH REINSTATEMENT	TRENCH WIDTH PLUS 2 FEET
PERMANENT PAVEMENT TRENCH REINSTATEMENT	TRENCH WIDTH PLUS 2 FEET
BIT. CONC. & CONCRETE SIDEWALK REPAIR	10'-0"
BIT. CONC. & CONCRETE DRIVE REPAIR	10'-0"
BIT. CONC. & CONCRETE CURB REPAIR	10'-0"

**PAYMENT LIMIT TABLE**



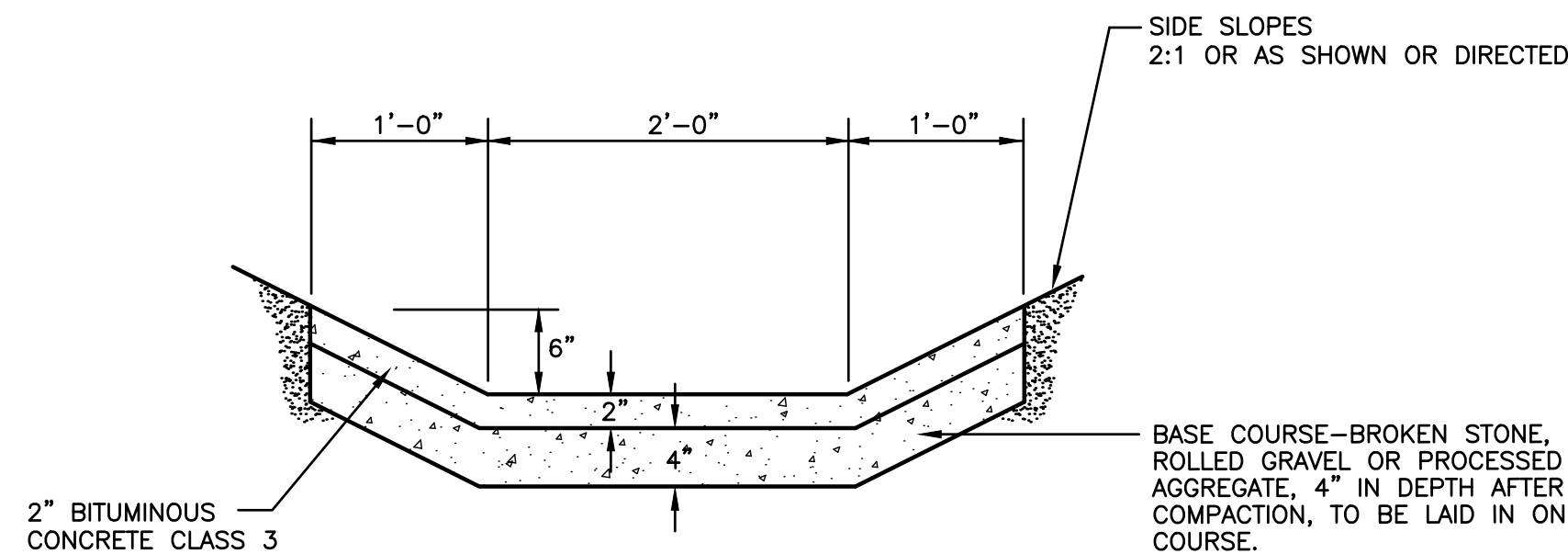
**CONCRETE DRIVEWAY APRON DETAIL**

NOT TO SCALE



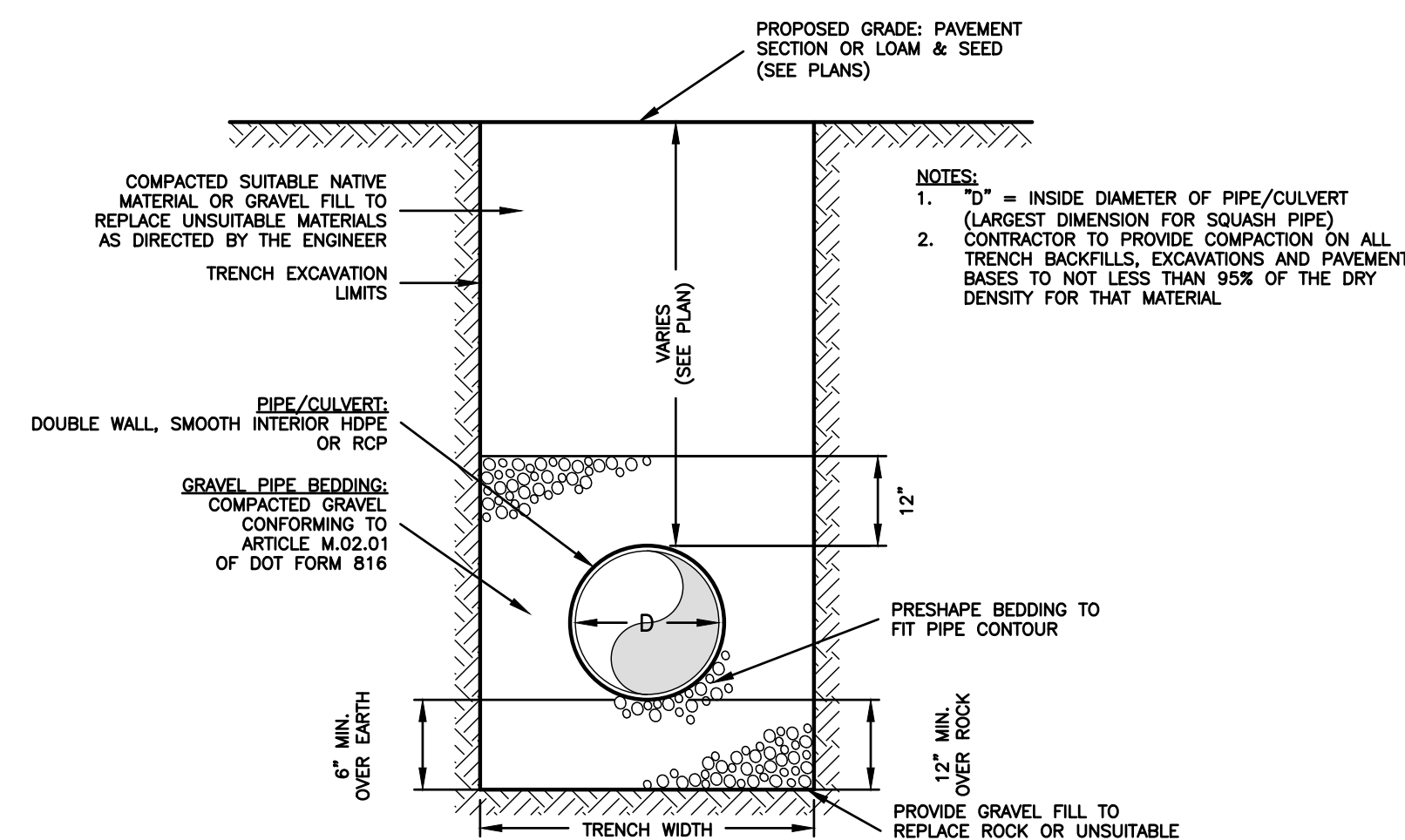
**BITUMINOUS CONCRETE DRIVEWAY APRON**

NOT TO SCALE



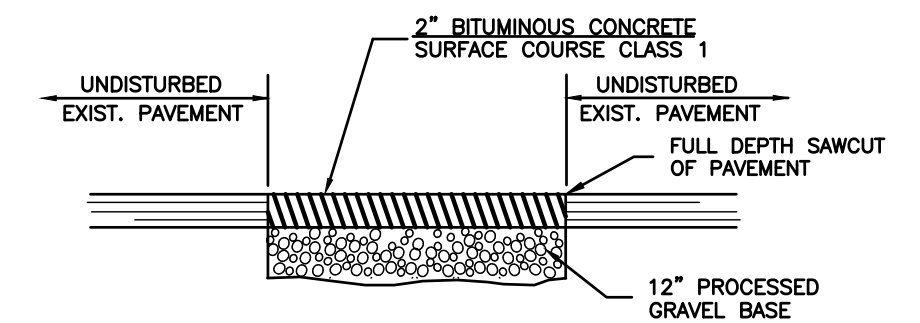
**PAVED LEAK OFF DETAIL**

NOT TO SCALE



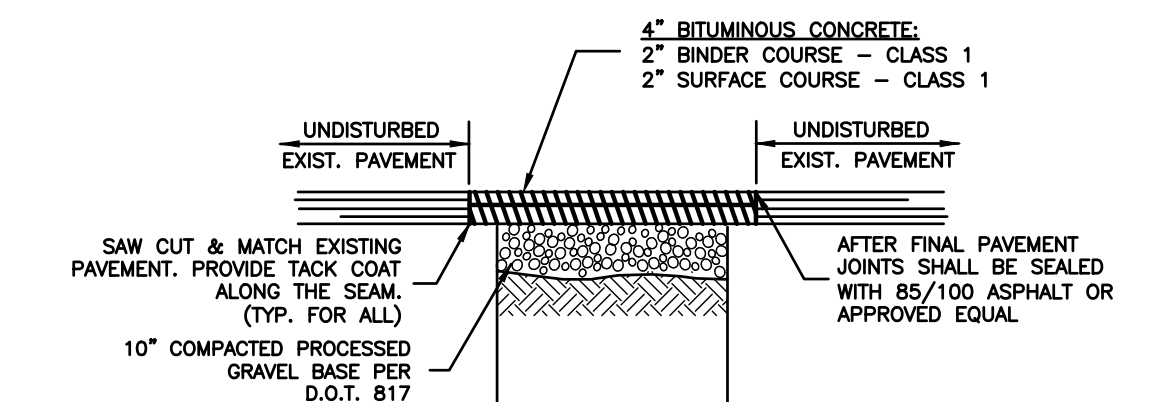
**TRENCH DETAIL: DRAINAGE CULVERT**

NOT TO SCALE



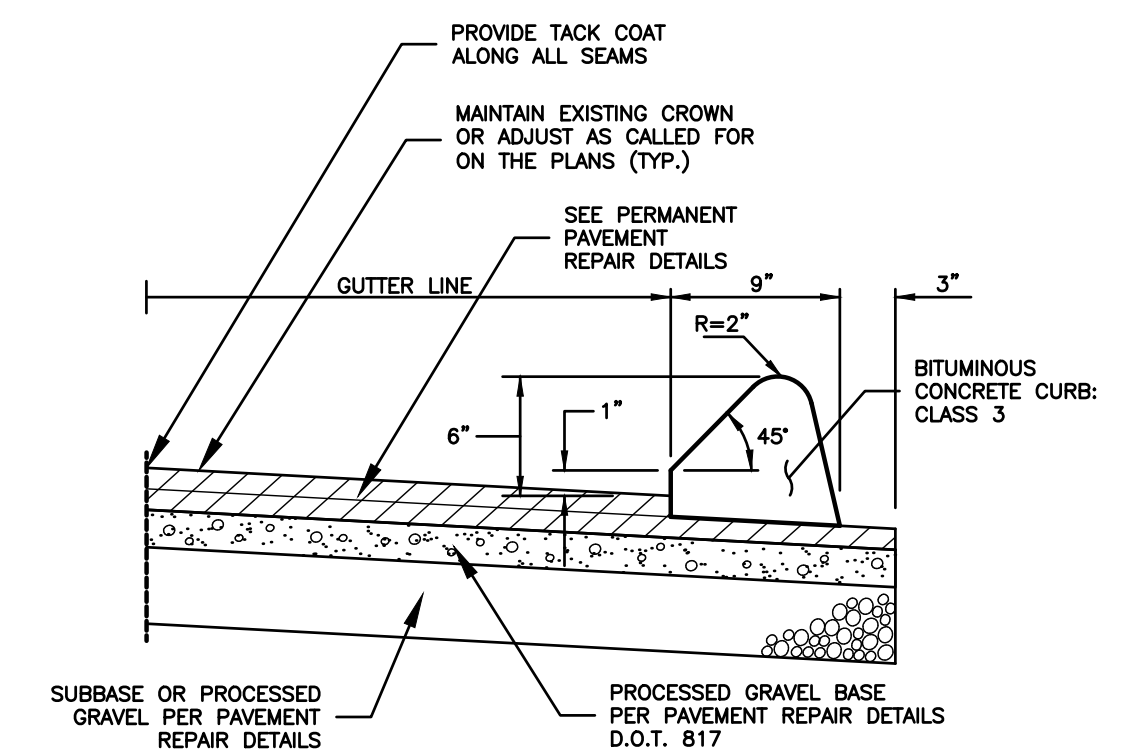
**TEMPORARY PAVEMENT REPAIR (LOCAL ROADS)**

NOT TO SCALE



**PERMANENT PAVEMENT REPAIR (LOCAL ROADS)**

NOT TO SCALE



**BITUMINOUS CONCRETE LIP CURBING**

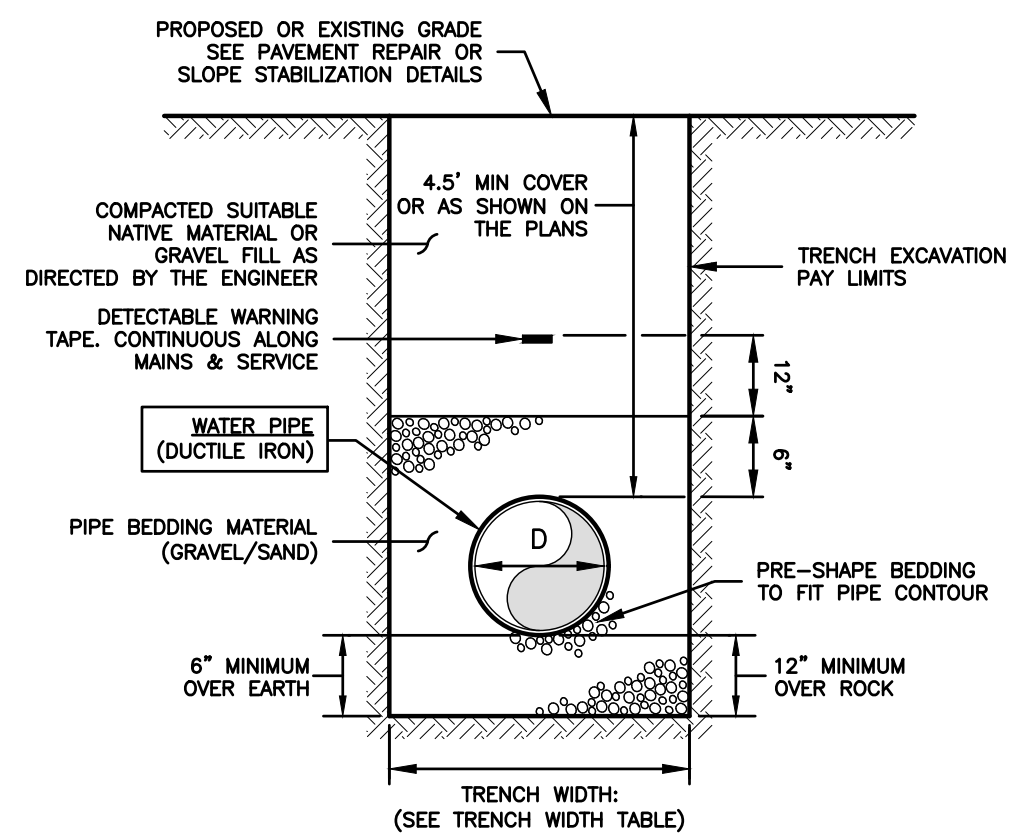
NOT TO SCALE

CALL TWO FULL WORKING DAYS IN ADVANCE

CALL BEFORE YOU DIG  
1-800-962-4455 CT  
TOLL FREE STATEWIDE

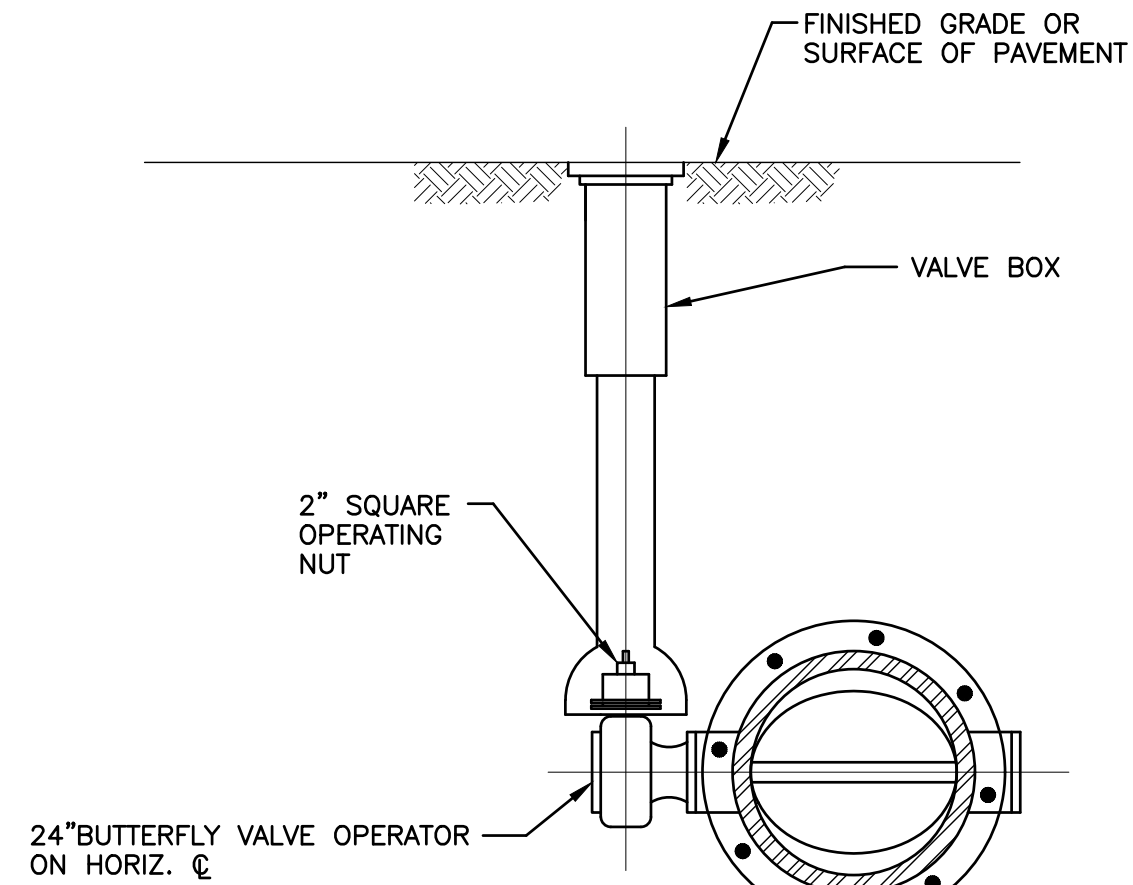
<p><b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING</p> <p>317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165</p>		<p>Project No. CLA-6073 Proj. Engineer D.P.H Date: 01/14/19 Sheet No. 10</p>
<p><b>NORWICH PUBLIC UTILITIES</b></p> <p><b>STONY BROOK TRANSMISSION MAIN RENEWAL</b></p> <p>DETAIL SHEET 1</p>		<p>2 04/01/19 ISSUED FOR BID 1 01/25/19 MISCELLANEOUS REVISIONS</p>



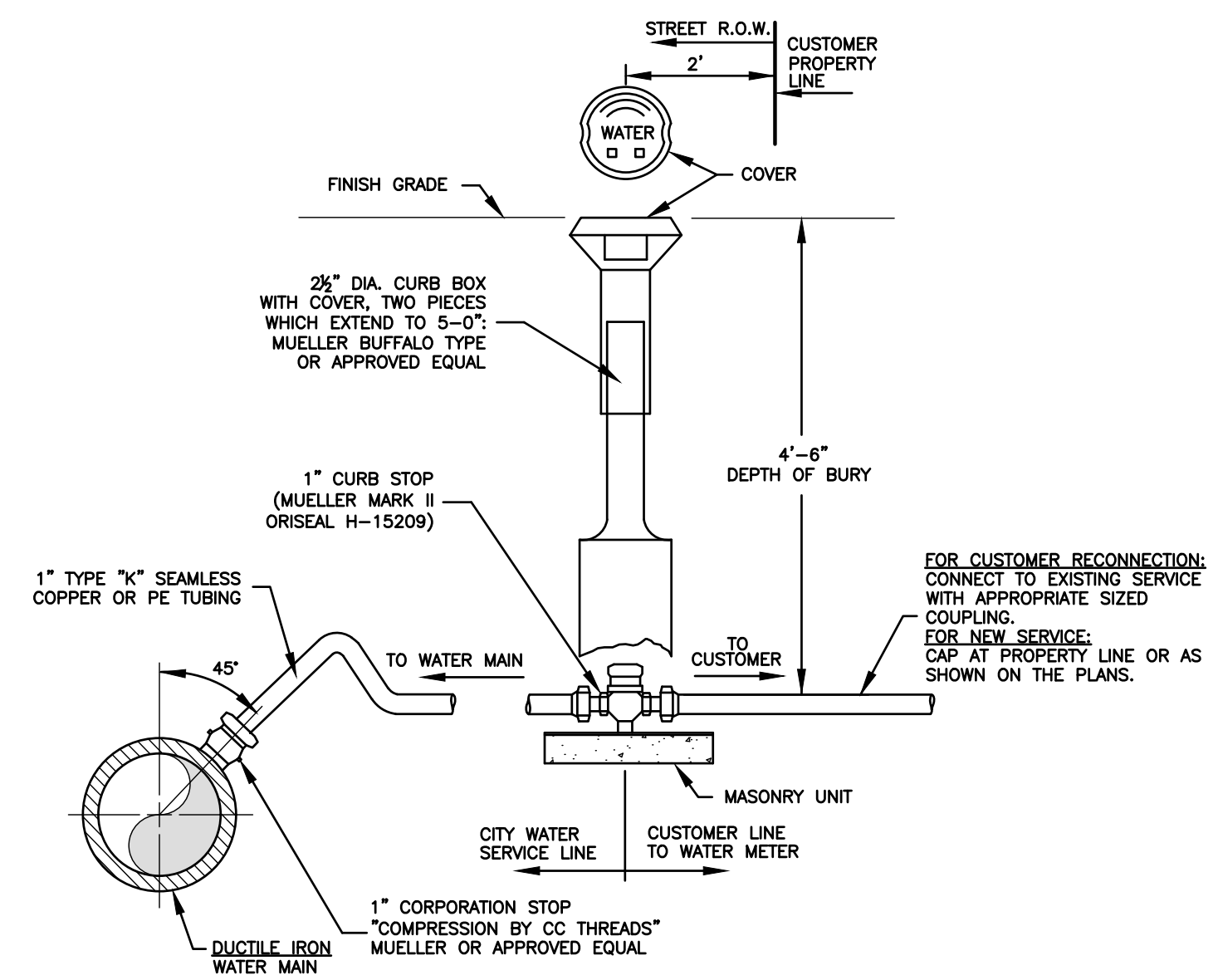


- NOTES:
1. D=INSIDE DIAMETER OF PIPE
  2. TRENCH WIDTHS ARE SET TO ESTABLISH PAY LIMITS ONLY.
  3. ALL EXCAVATIONS MUST MEET OSHA STANDARDS.
  4. CONTRACTOR TO PROVIDE COMPACTION ON ALL TRENCH BACKFILLS. EXCAVATIONS AND PAVEMENT BASES TO NOT LESS THAN 90% OF THE DRY DENSITY FOR THAT MATERIAL.
  5. BEDDING MATERIAL TO CONFORM TO M.08.03.1 AS PER CT DOT FORM 817.

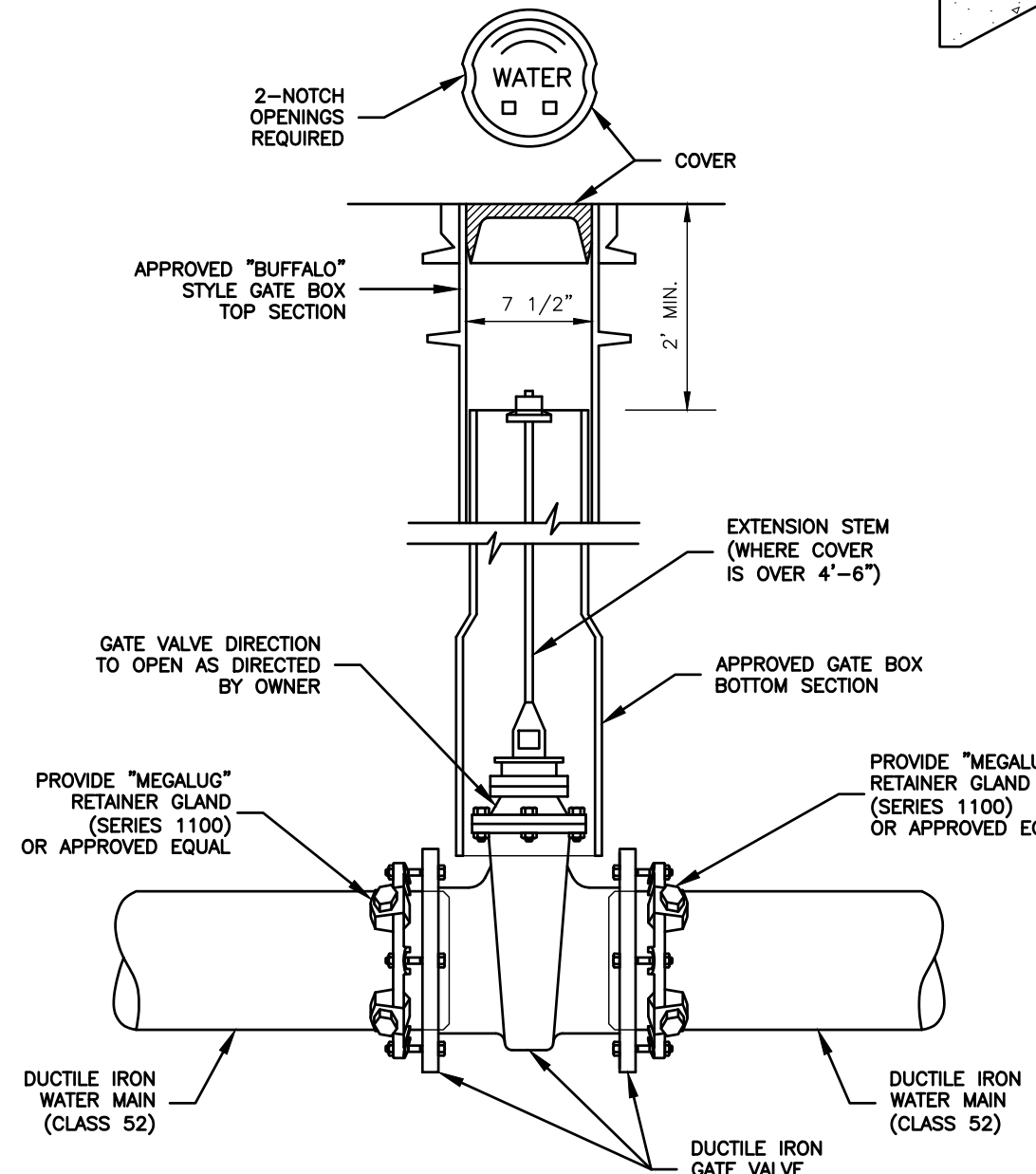
**TRENCH DETAIL: WATER MAIN & SERVICE**  
NOT TO SCALE



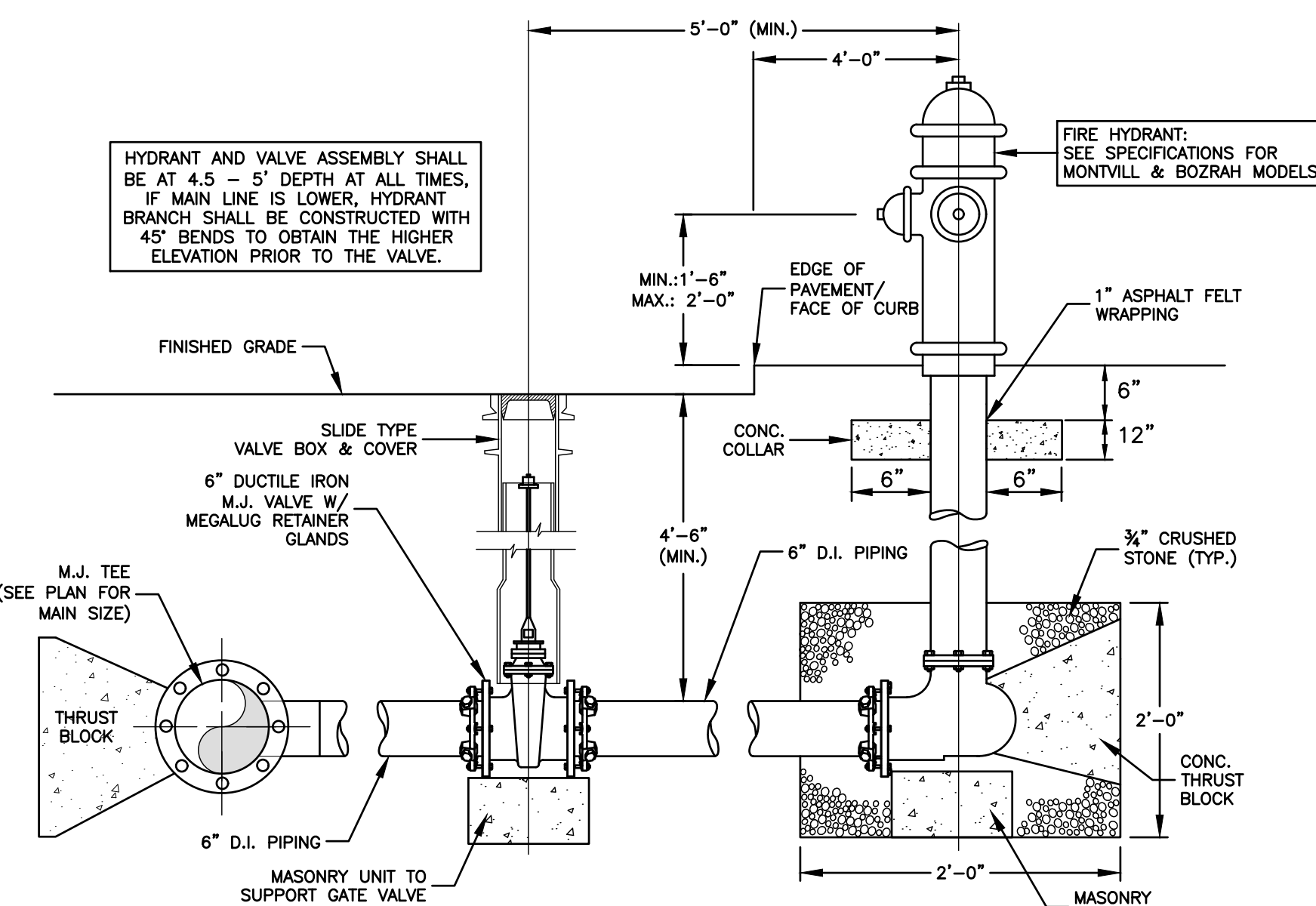
**BUTTERFLY VALVE DETAIL (GREATER THAN 12')**  
NOT TO SCALE



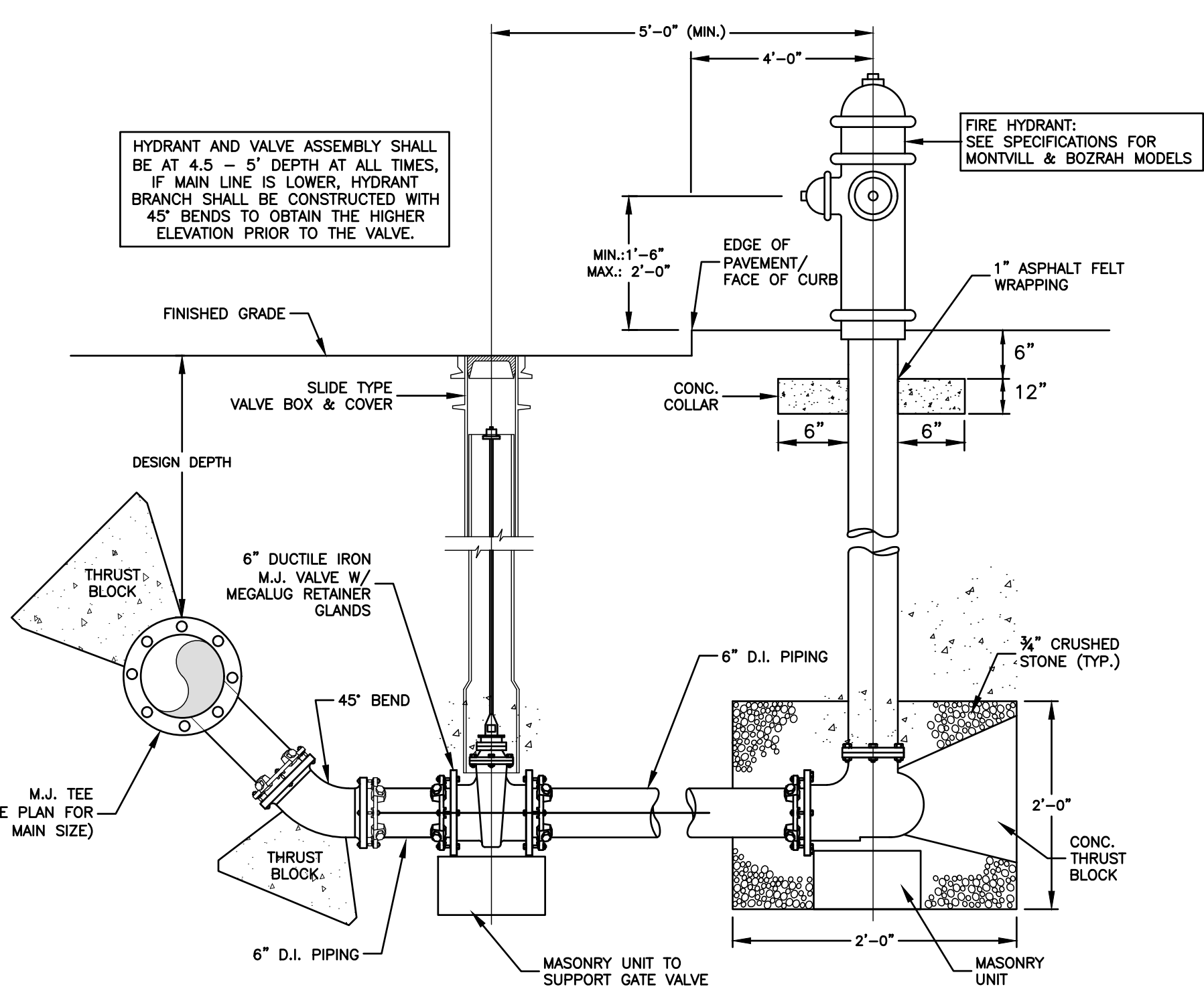
**WATER SERVICE CONNECTION**  
NOT TO SCALE



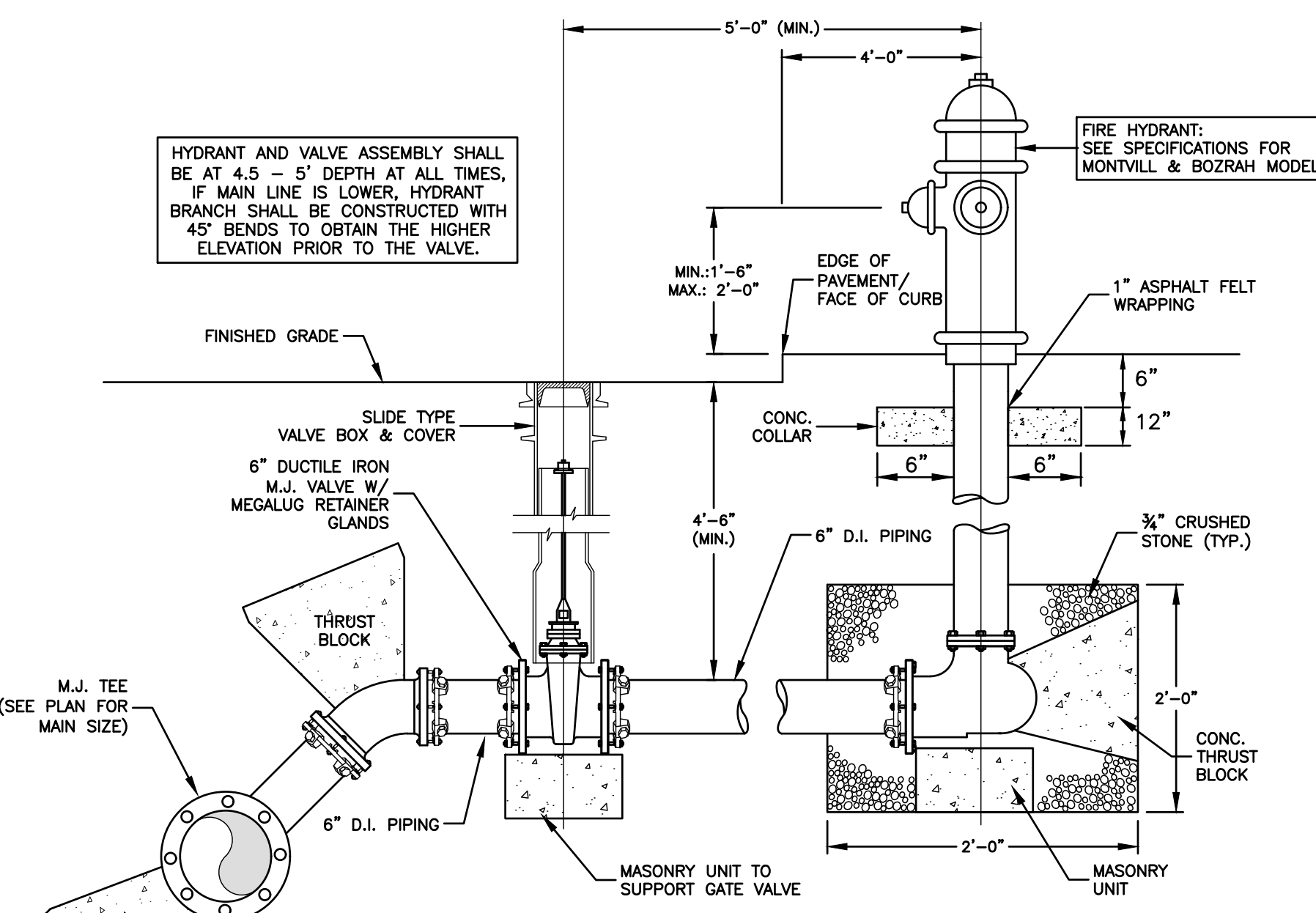
**12" OR LESS VERTICAL GATE VALVE & GATE BOX**  
NOT TO SCALE



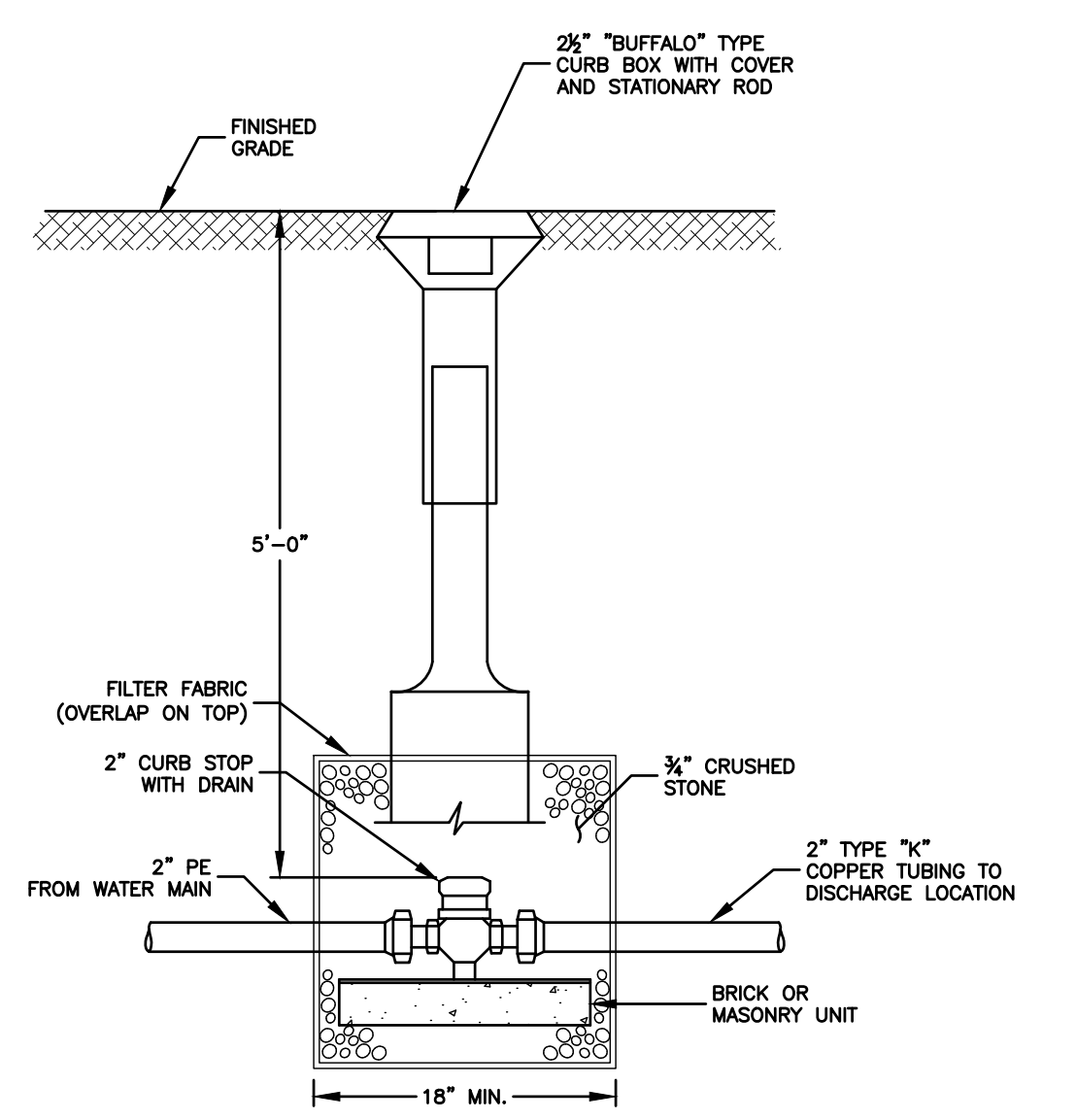
**FIRE HYDRANT ASSEMBLY DETAIL**  
NOT TO SCALE



**BLOW OFF FIRE HYDRANT ASSEMBLY DETAIL**  
NOT TO SCALE



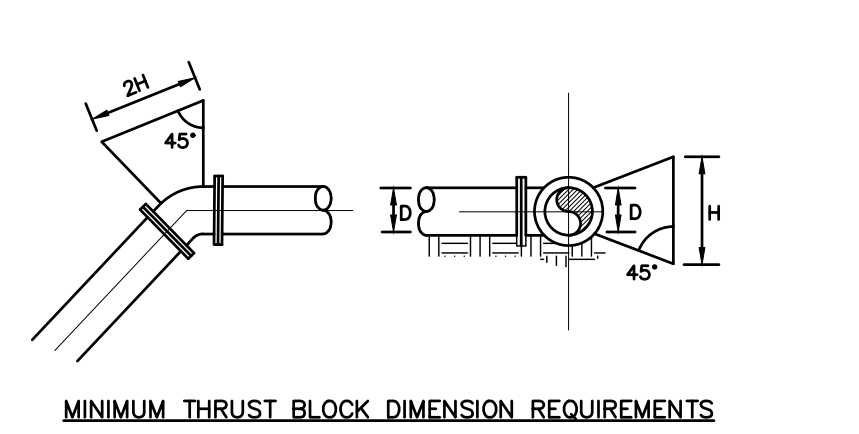
**AIR RELEASE FIRE HYDRANT ASSEMBLY DETAIL**  
NOT TO SCALE



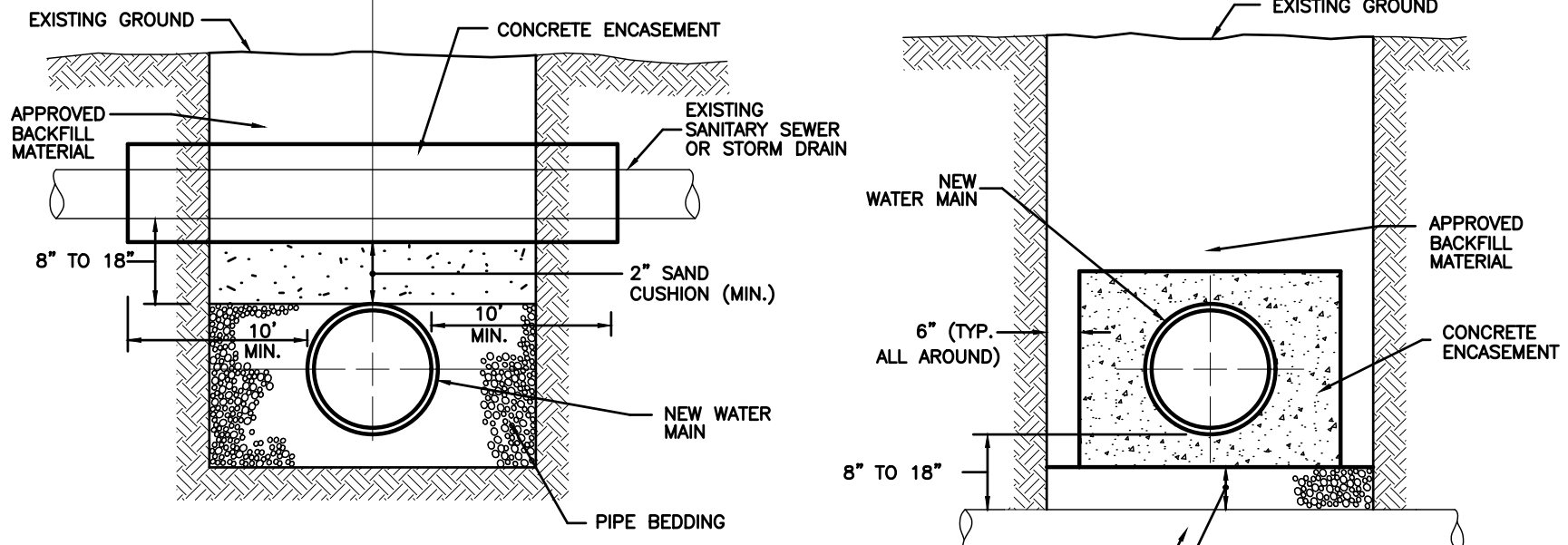
**FLUSHING ASSEMBLY DETAIL**  
NOT TO SCALE

REACTION TYPE	PIPE SIZE							
	4"	6"	8"	10"	12"	16"	18"	24"
A 90° BEND	1.8	4.4	7.8	11.2	17.2	30.8	36.0	69.2
B TEE OR CAP	1.4	3.2	5.6	8.4	12.2	21.8	27.8	49.5
C 45° BEND	1.0	2.4	4.2	6.0	9.4	16.6	19.4	37.6
D 22 1/2° BEND	0.6	1.2	2.2	3.0	4.8	8.6	10.0	19.2
E 11 1/4° BEND	0.2	0.6	1.0	1.6	2.4	4.2	5.0	9.6

- OTHER TEST PRESSURES FOR THE ABOVE REACTIONS
- SQUARE FEET OF CONCRETE THRUST BLOCKING FOR OTHER TEST PRESSURES IS DIRECTLY PROPORTIONAL TO THE ABOVE TABLE. FOR INSTANCE, AT 100 PSI TEST PRESSURE THE ABOVE NUMBERS ARE HALVED. THE ABOVE NUMBERS REPRESENT MINIMUM ALLOWABLE SIZES FOR THRUST BLOCKS.



**THRUST BLOCK DETAILS & DIMENSIONS**  
NOT TO SCALE

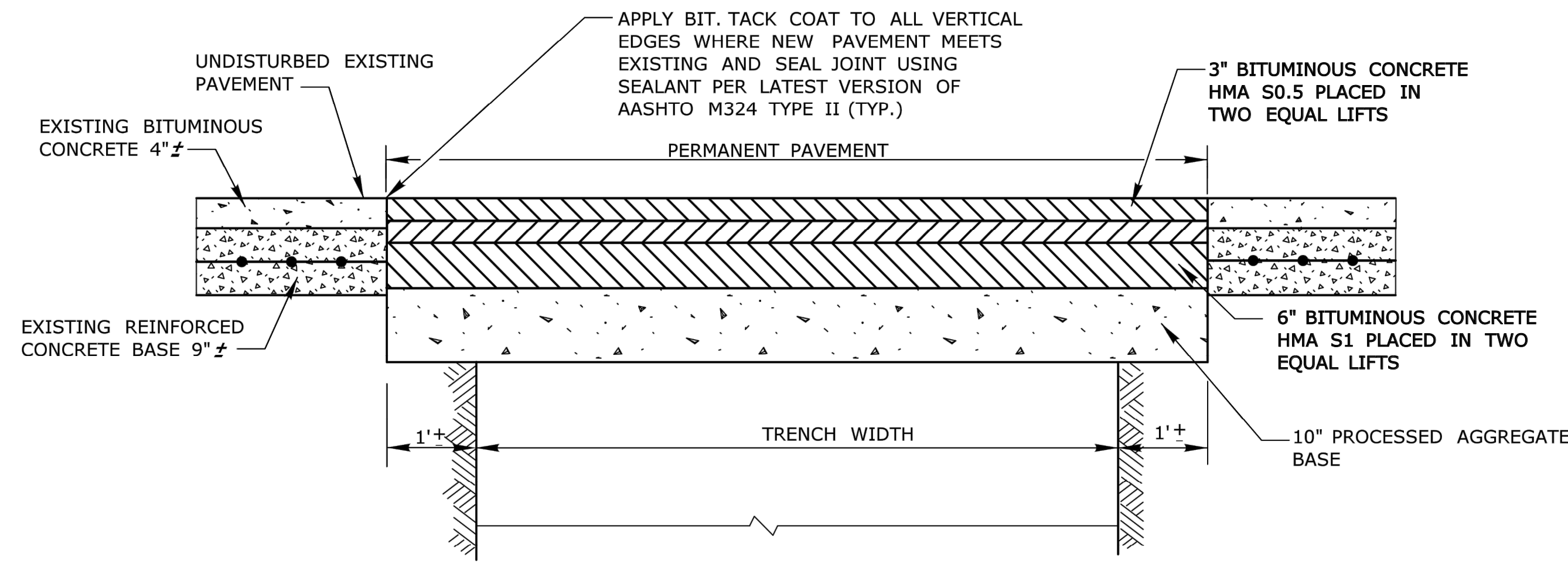


- NOTES:
1. WHERE VERTICAL SEPARATION BETWEEN THE WATER MAIN AND SANITARY SEWERS OR STORM DRAINS IS 18" OR LESS A 6" CONCRETE ENCASEMENT IS REQUIRED FOR A DISTANCE OF TEN FEET ON EACH SIDE OF THE CROSSING.
  2. AT CROSSING LOCATIONS, A FULL LENGTH OF WATER MAIN SHALL BE CENTERED AT ALL SANITARY SEWER AND STORM DRAIN CROSSINGS SUCH THAT THE WATER PIPE JOINTS ARE SPACED AS FAR AS POSSIBLE FROM THE SEWER.

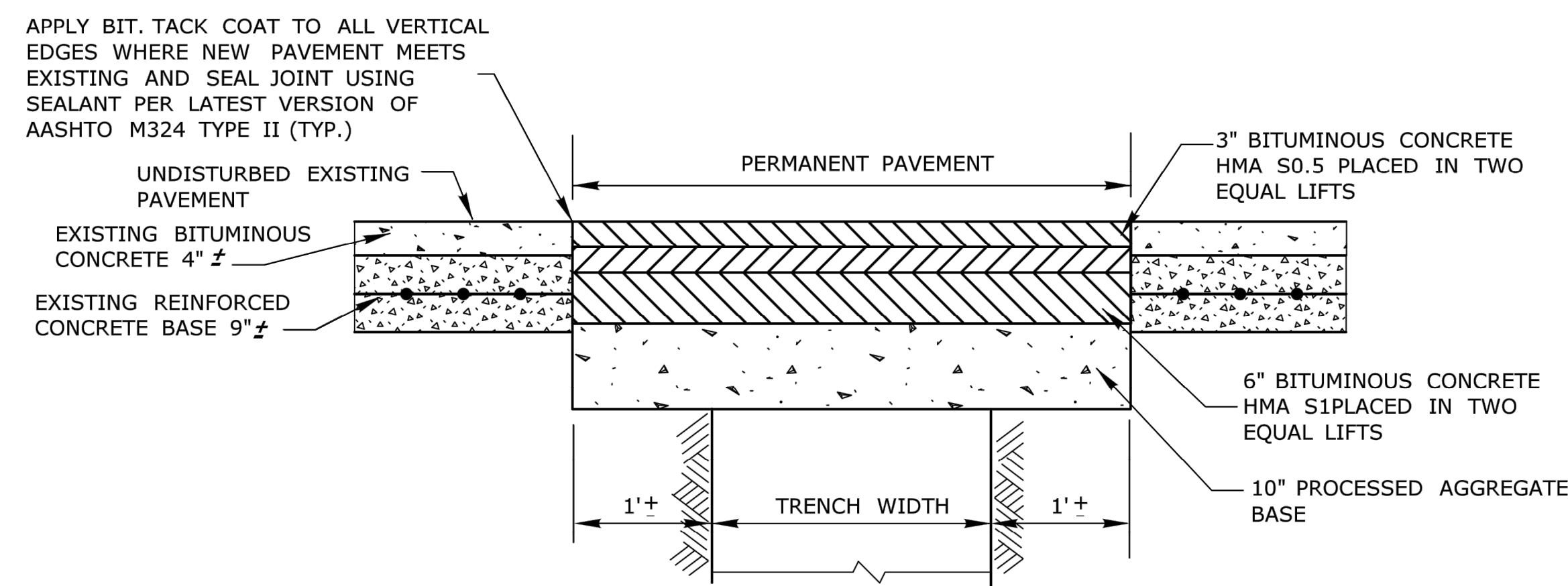
**TYPICAL CONCRETE ENCASEMENT DETAIL**  
NOT TO SCALE

<b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING 317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165		Project No. CLA-6073 Proj. Engineer D.P.H. Date: 01/14/19 Sheet No. <b>11</b>
2 04/01/19 ISSUED FOR BID 1 01/25/19 MISCELLANEOUS REVISIONS No. DATE REVISION		NORWICH PUBLIC UTILITIES <b>STONY BROOK TRANSMISSION MAIN RENEWAL</b> DETAIL SHEET 2

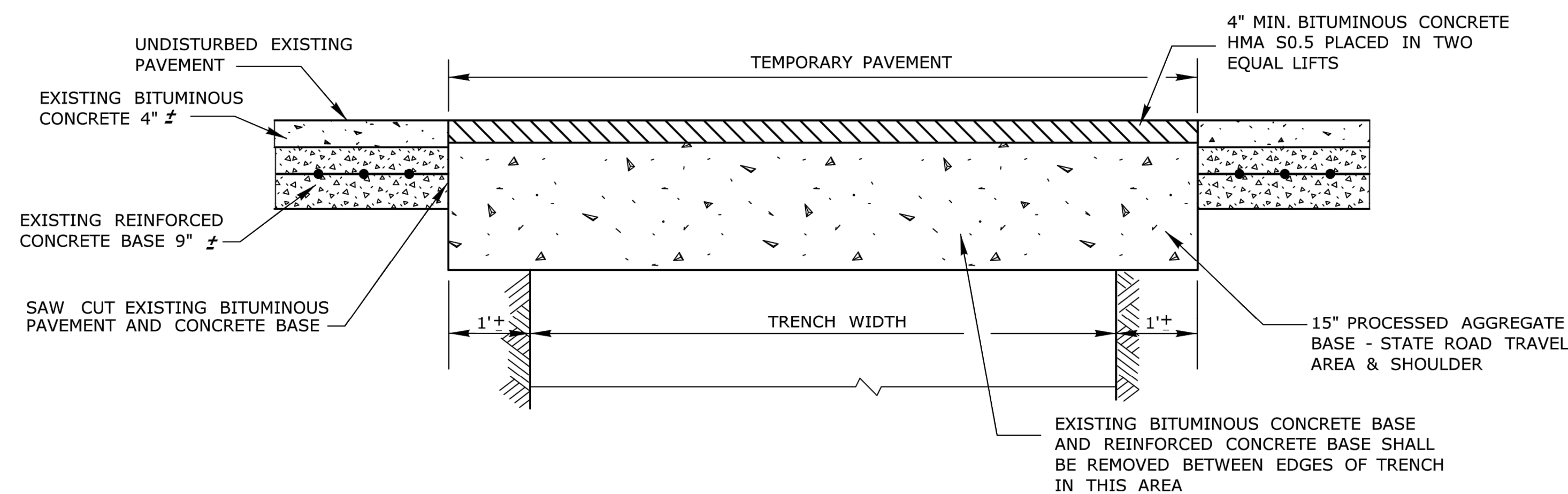
m:\6000\6000\6073 stony brook transmission main\Drawings\6073 9 & 10\_Detail Sheets.dwg, 4/1/2019 4:20:10 PM



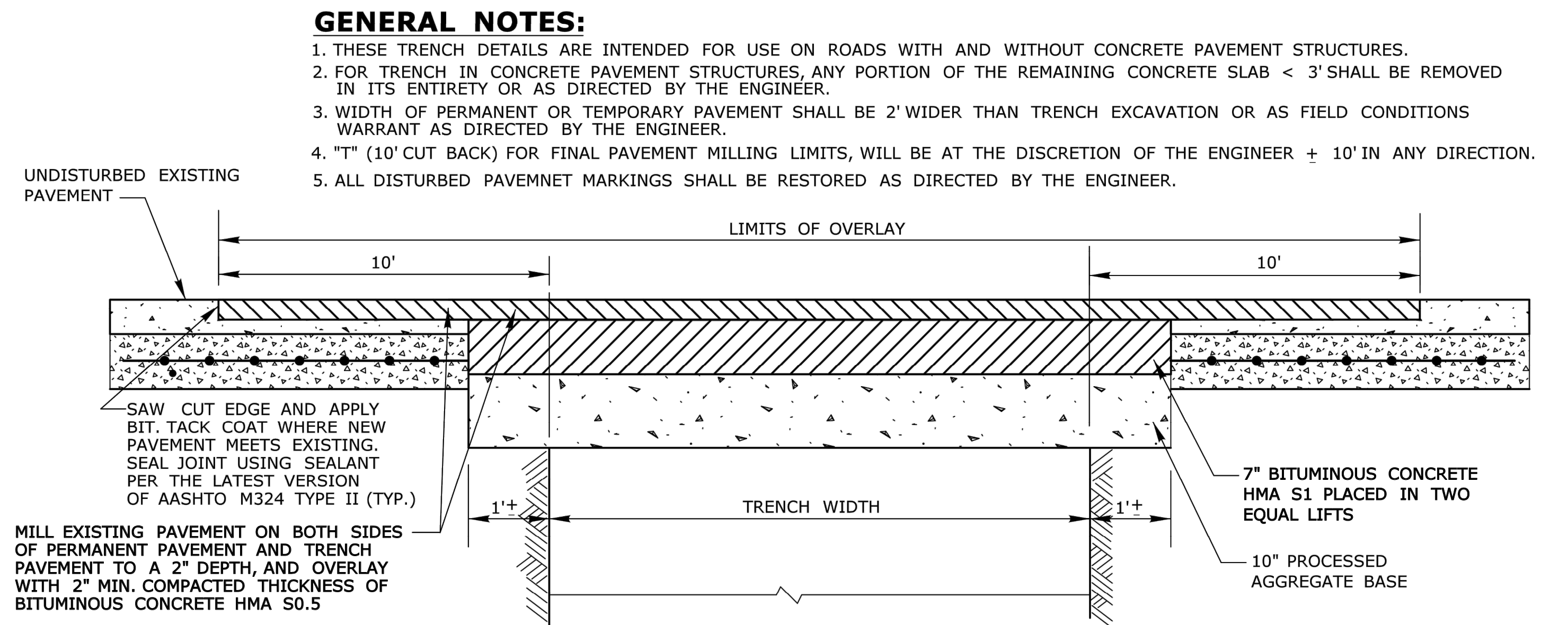
**PERMANENT PAVEMENT TRENCH DETAIL  
TRENCHES PERPENDICULAR TO EDGE OF PAVEMENT**



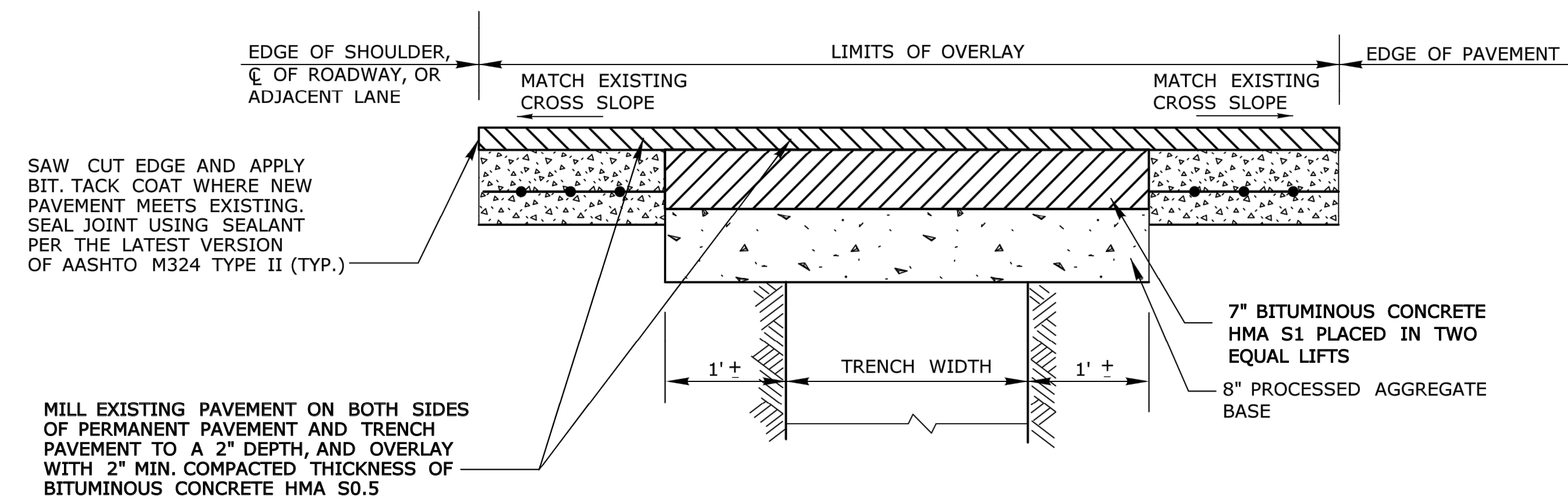
**PERMANENT PAVEMENT TRENCH DETAIL  
TRENCH PARALLEL TO EDGE OF PAVEMENT**



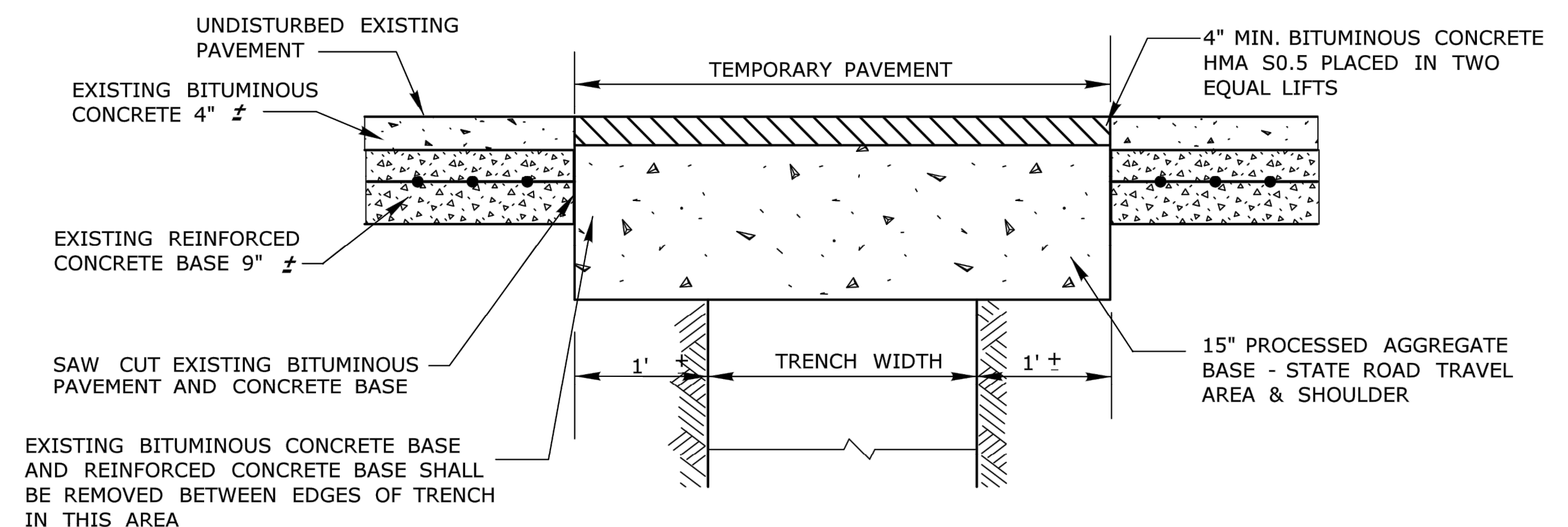
**TEMPORARY PAVEMENT DETAIL  
TRENCHES PERPENDICULAR TO EDGE OF PAVEMENT**



**MILLING AND OVERLAY  
TRENCHES PERPENDICULAR TO EDGE OF PAVEMENT**



**MILLING AND OVERLAY  
TRENCH PARALLEL TO EDGE OF PAVEMENT**



**TEMPORARY PAVEMENT DETAIL  
TRENCH PARALLEL TO EDGE OF PAVEMENT**

**GENERAL NOTES:**

1. THESE TRENCH DETAILS ARE INTENDED FOR USE ON ROADS WITH AND WITHOUT CONCRETE PAVEMENT STRUCTURES.
2. FOR TRENCH IN CONCRETE PAVEMENT STRUCTURES, ANY PORTION OF THE REMAINING CONCRETE SLAB < 3' SHALL BE REMOVED IN ITS ENTIRETY OR AS DIRECTED BY THE ENGINEER.
3. WIDTH OF PERMANENT OR TEMPORARY PAVEMENT SHALL BE 2' WIDER THAN TRENCH EXCAVATION OR AS FIELD CONDITIONS WARRANT AS DIRECTED BY THE ENGINEER.
4. "T" (10' CUT BACK) FOR FINAL PAVEMENT MILLING LIMITS, WILL BE AT THE DISCRETION OF THE ENGINEER ± 10' IN ANY DIRECTION.
5. ALL DISTURBED PAVEMENT MARKINGS SHALL BE RESTORED AS DIRECTED BY THE ENGINEER.

		<b>CLA Engineers, Inc.</b> CIVIL • STRUCTURAL • SURVEYING	
		317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165	
2	04/01/19	ISSUED FOR BID	Project No. CLA-6073
1	01/25/19	MISCELLANEOUS REVISIONS	Proj. Engineer D.P.H
No.	DATE	REVISION	Date: 01/14/19
NORWICH PUBLIC UTILITIES			Sheet No.
<b>STONY BROOK TRANSMISSION MAIN RENEWAL</b>			<b>12</b>
STATE ROAD TRENCH DETAILS			