

STANDARD FOR STABILIZATION WITH MULCH ONLY

- 1. SITE PREPARATION
A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR LIMING, FERTILIZING, AND SOIL PREPARATION.
B. INSURE NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS INTERLOCKS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
2. PROTECTIVE MATERIALS
A. UNLIMITED SMALL-GRAIN STRAW AT 2.0 TO 2.5 TONS PER ACRE...
B. WOOD-CHIP OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE...

STANDARD FOR PERMANENT STABILIZATION WITH SOD

- METHODS AND MATERIALS
1. CULTIVATED SOD IS PREFERRED OVER NATIVE OR PASTURE SOD...
2. SOD SHOULD BE FREE OF WEEDS AND UNDESIRABLE CORSE WEEDY GRASSES...
3. SOD SHOULD BE OF UNIFORM THICKNESS...
4. SOD SHOULD BE VIGOROUS AND DENSE AND BE ABLE TO RETAIN ITS OWN SHAPE AND WEIGHT...

- 4. MULCHING
MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED...
5. STRAW OR HAY UNLIMITED SMALL GRAIN STRAW MAY BE USED...
6. WOOD-CHIP OR PAPER-FIBER MULCH - SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS...

- 7. FILLING
MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED...
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- 10. TOP-DRESSING
SLOW RELEASE NITROGEN IS USED IN ADDITION TO SUGGESTED FERTILIZER...
11. SOIL PREPARATION
GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR LIMING, FERTILIZING, AND SOIL PREPARATION...
12. PROTECTIVE MATERIALS
UNLIMITED SMALL-GRAIN STRAW AT 2.0 TO 2.5 TONS PER ACRE...

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

- 1. SITE PREPARATION
A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING...
B. INSURE NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS INTERLOCKS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
2. SEEDBED PREPARATION
A. UNIFORMITY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED...
B. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE...

- 3. SEEDING
A. PERMANENT VEGETATIVE MIXTURES & PLANTING RATES
(1) HARD FESCUE - 175 LBS/ACRE 4 LBS/1000 SQ.FT.
(2) CHEVING FESCUE - 175 LBS/ACRE 4 LBS/1000 SQ.FT.
(3) STRONG GREENER RED FESCUE - 175 LBS/ACRE 4 LBS/1000 SQ.FT.
(4) PERENNIAL Ryegrass - 45 LBS/ACRE 1 LBS/1000 SQ.FT.
(5) KY. BLUEGRASS - 45 LBS/ACRE 1 LBS/1000 SQ.FT.
B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND...

- 4. MULCHING
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12. PROTECTIVE MATERIALS
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SEQUENCE OF CONSTRUCTION

- PHASE 1: INSTALL STONE WALL-FORMING PILE AND OTHER SOIL EROSION SEDIMENT CONTROL MEASURES INCLUDING DOWN SLOPE PERMETER HAY BALES AND SILT FENCE.
PHASE 2: CLEAR AND ROUGH GRADE FOR NEW BUILDING SITE AND OTHER STRUCTURES EXCEPTING EXCAVATION.
PHASE 3: EXCAVATION, CONSTRUCTION AND STABILIZATION OF DETENTION BASINS, EXCAVATE AND INSTALL UNDERGROUND PIPING AND DRAINAGE STRUCTURES.
PHASE 4: EXCAVATE FOR BUILDING FOUNDATION.
PHASE 5: COMPLETE BUILDING CONSTRUCTION.
PHASE 6: EXCAVATE AND INSTALL FINAL SITE IMPROVEMENTS INCLUDING CURBING, UNDERGROUND PIPING, AND DRAINAGE STRUCTURES.
PHASE 7: FINAL GRADING ON SITE.
PHASE 8: INSTALL PAVING, CONCRETE, AND FINAL VEGETATION INCLUDING SEEDING AND LANDSCAPING.

SOMERSET-UNION SOIL CONSERVATION DISTRICT SOIL EROSION & SEDIMENT CONTROL NOTES:

- 1. All Soil Erosion and Sediment Control practices shall be installed prior to any major soil disturbances...
2. Any disturbed areas that will be left exposed more than 30 Days and not subject to construction traffic...
3. Permanent Vegetation shall be seeded or sodded on all exposed areas within 10(10) days after final grading...
4. All work shall be done in accordance with the NJ State Standards for Soil Erosion and Sediment Control in New Jersey...
5. A sub-base course will be applied immediately following rough grading and installation of improvements...
6. Immediately following initial disturbance or rough grading of critical areas subject to erosion...
7. Any steep slopes requiring pipeline installation will be backfilled and stabilized dully...
8. Traffic control Standards require the installation of a 5'x30'x6'pad of 1 1/2" or 2" stone...
9. The Somerset-Union Soil Conservation District shall be notified in writing 48 hours in advance...
10. At the time when the site preparation for permanent vegetative stabilization is going to be accomplished...
11. In that NESA 424-39 et seq. requires that no Certificate of Occupancy be issued before the provisions of the Certified Plan for Soil Erosion and Sediment Control has been compiled...
12. Conduct Outlet Protection must be installed at all required outlets prior to the drainage system becoming operational.
13. Any changes to the Certified Soil Erosion and Sediment Control Plan will require the submission of revised Soil Erosion and Sediment Control Plans to the District for re-certification...
14. The Somerset-Union Soil Conservation District shall be notified of any changes in ownership.
15. Matching to the NJ Standards is required for obtaining a Conditional Report of Compliance...
16. Contractor is responsible for keeping all adjacent roads clean during life of construction project.
17. The developer shall be responsible for remediating any erosion or sediment problems that arise as a result of ongoing construction...
18. Hydro seeding is a two- step process. The first step includes seed, fertilizer, lime, etc., along with minimal amounts of mulch to promote consistency...
19. The use of hydro-mulch, as opposed to stow, is limited to optimum seeding dates as listed in the NJ Standards.

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

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B. INSURE NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS INTERLOCKS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
2. SEEDBED PREPARATION
A. UNIFORMITY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED...
B. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE...
C. MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED...
3. SEEDING
A. TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTHS
-COOL SEASON GRASSES
(1) PERENNIAL Ryegrass - 100 LBS / ACRE PLANT BETWEEN MARCH 1 AND MAY 15 BETWEEN AUGUST 15 AND OCTOBER 1...
(2) SPRING OATS - 80 LBS / ACRE PLANT BETWEEN MARCH 1 AND MAY 15 BETWEEN AUGUST 15 AND OCTOBER 1...
(3) WINTER BARLEY - 98 LBS / ACRE PLANT BETWEEN AUGUST 15 AND OCTOBER 1...
(4) ANNUAL Ryegrass - 100 LBS / ACRE PLANT BETWEEN MARCH 1 AND JUNE 15 BETWEEN AUGUST 1 AND SEPTEMBER 15...
(5) WINTER CERIAL RYE - 112 LBS / ACRE PLANT BETWEEN AUGUST 1 AND NOVEMBER 15...
-WARM SEASON GRASSES
(1) PEARL MILLET - 20 LBS / ACRE PLANT BETWEEN MAY 15 AND AUGUST 15...
(2) MULLET (GERMAN OR HAWKAWAY) - 30 LBS / ACRE PLANT BETWEEN MAY 15 AND AUGUST 15...
3. CONVENTIONAL SEEDING APPLY SEED UNIFORMLY BY HAND...
4. AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT...
4. MULCHING
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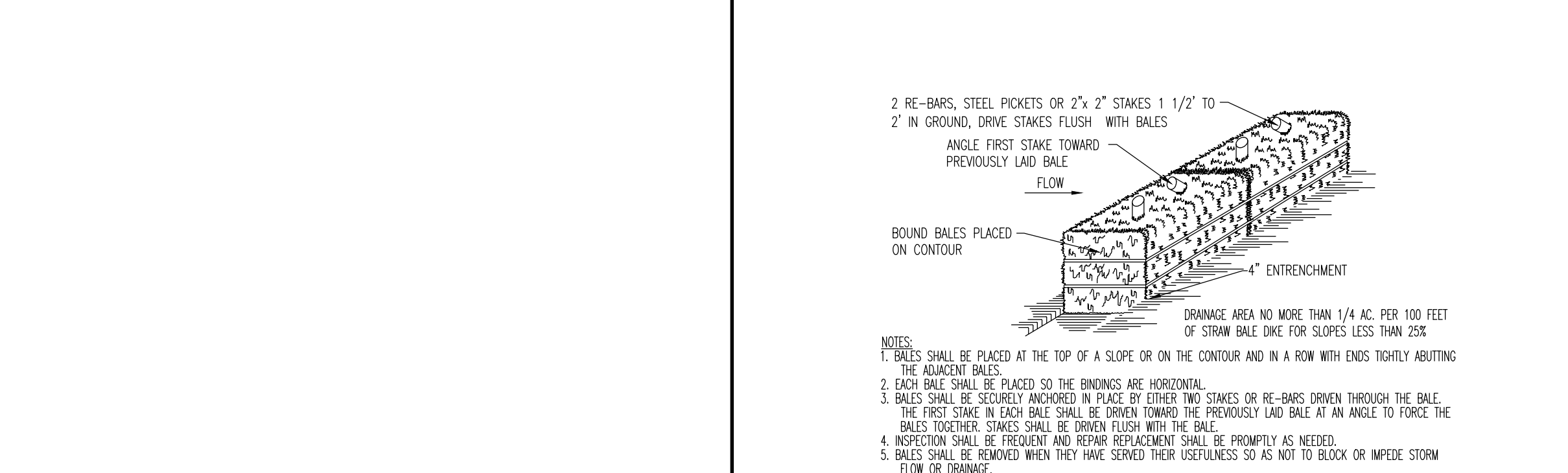
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SOMERSET-UNION SOIL CONSERVATION DISTRICT SOIL EROSION & SEDIMENT CONTROL NOTES:

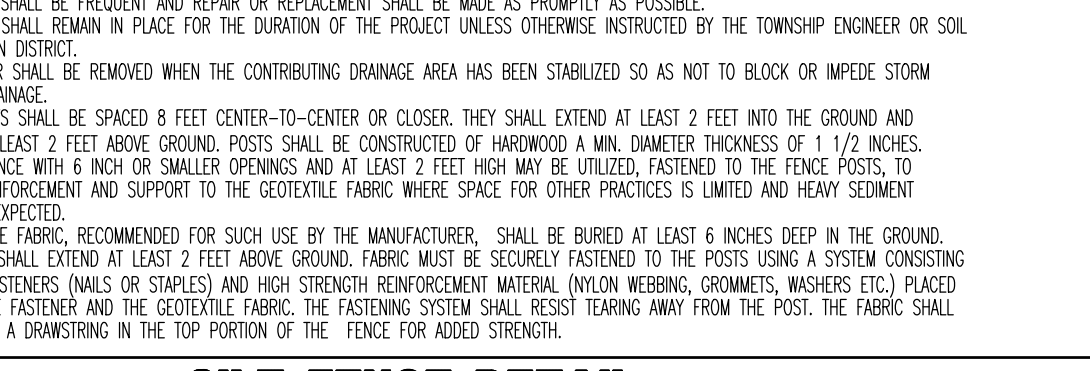
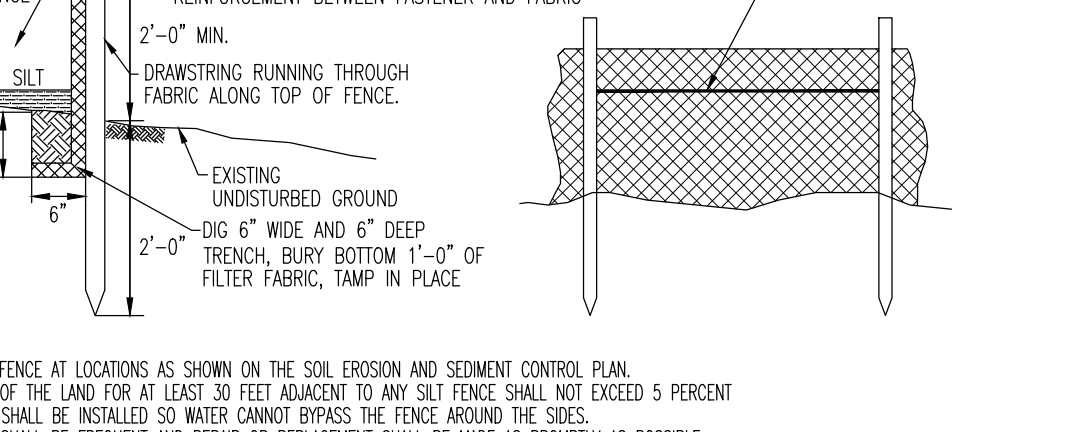
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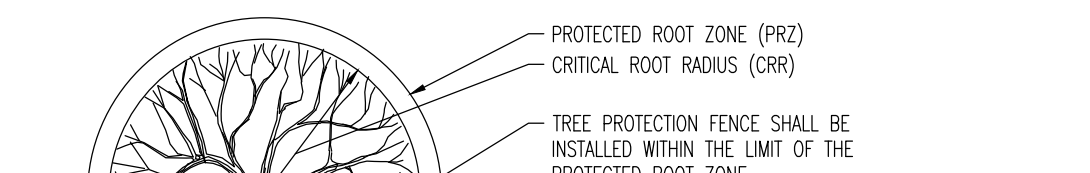
HAYBALE SEDIMENT BARRIER DETAIL



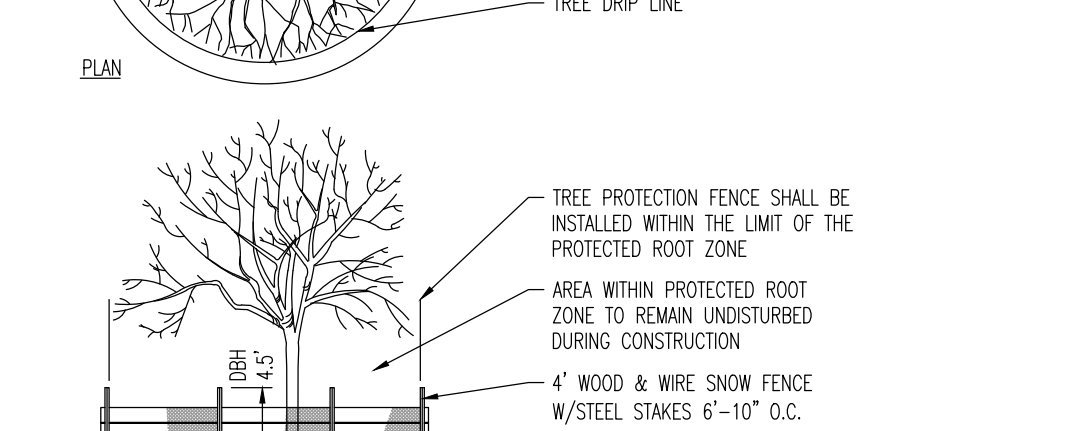
SILT FENCE DETAIL



TEMPORARY STOCKPILE DETAIL



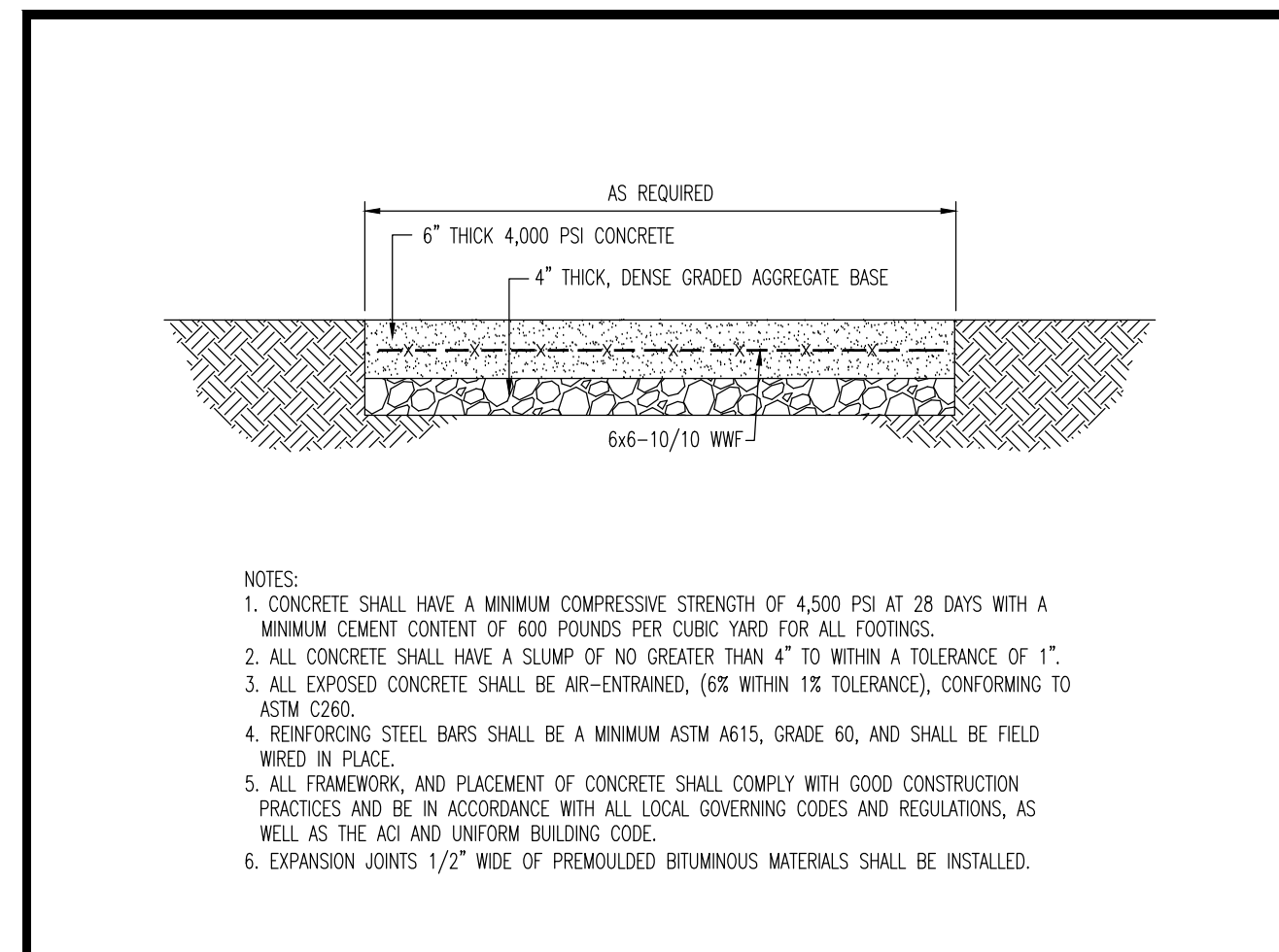
STABILIZED CONSTRUCTION ENTRANCE



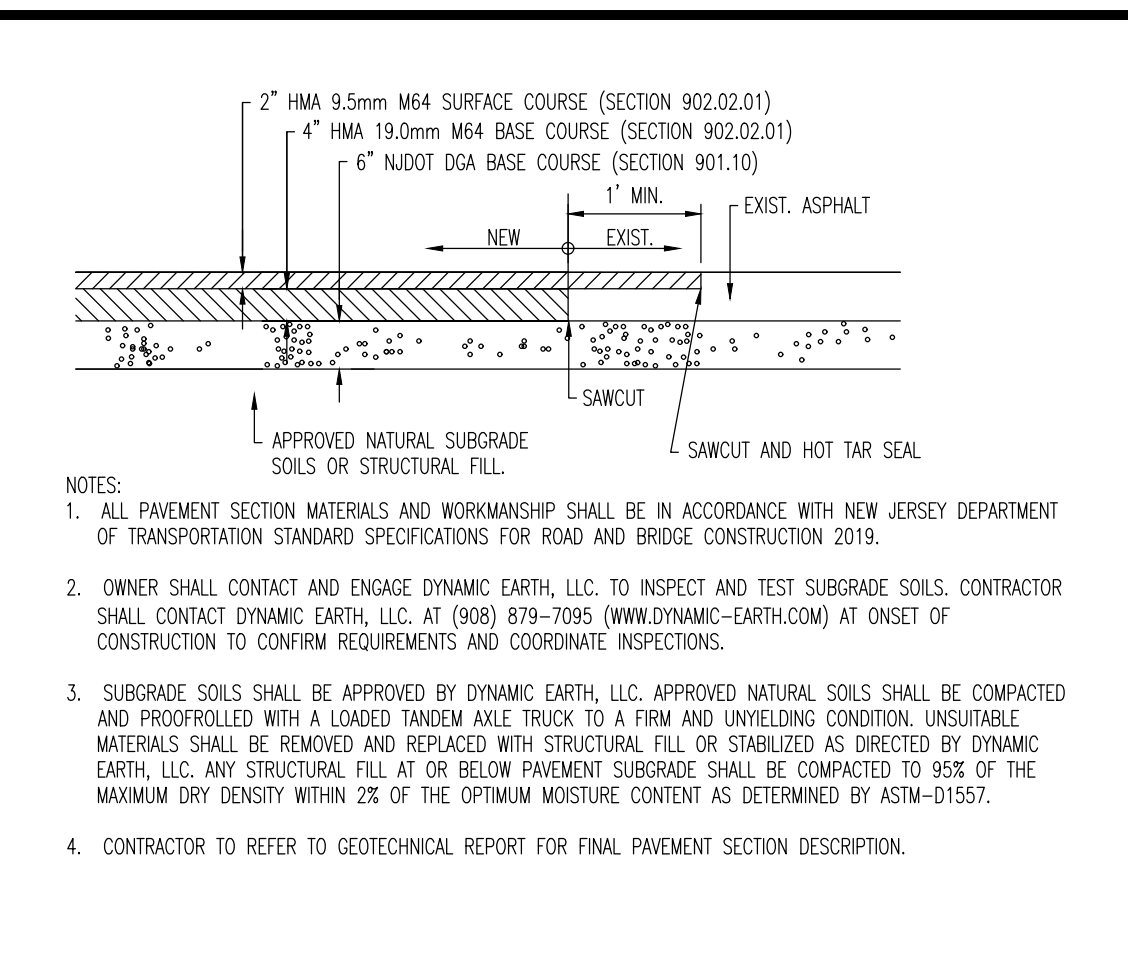
INLET FILTER DETAIL

Project: 01/27/22 - 10:15 AM By: B. Knepper
Title: Erosion & Sediment Control Notes & Details
Location: 12 SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS

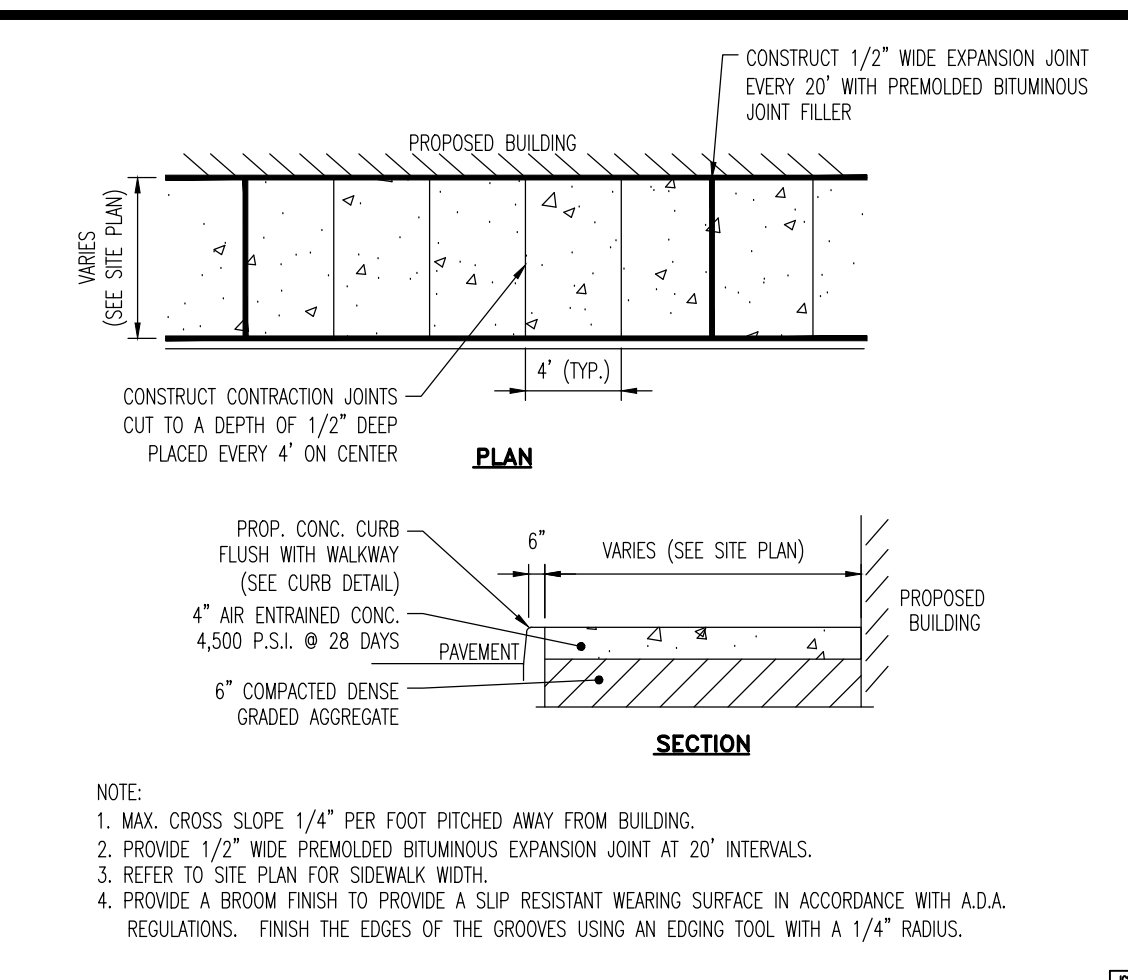
IN CASE OF DISCREPANCY, TOWNSHIP STANDARD DETAILS SHALL HOLD
THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION
DYNAMIC ENGINEERING
LAND DEVELOPMENT CONSULTING • PERMITTING • GEOTECHNICAL • ENVIRONMENTAL • SURVEY • PLANNING & ZONING
TITLE: SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS
PROJECT: HARBOR GROUP PROPOSED WAREHOUSE & SITE IMPROVEMENTS
JOB No: 4035-99-001 DATE: 10/07/2021
DRAWN BY: MFZ SCALE: (H) NOT TO (V) SCALE
DESIGNED BY: DT SHEET No:
CHECKED BY: KCT
KYLE C. KAVINSKI JOSHUA M. SEWALD
PROFESSIONAL ENGINEER NEW JERSEY LICENSE No. 52985
PROFESSIONAL ENGINEER NEW JERSEY LICENSE No. 52988
12 OF 23



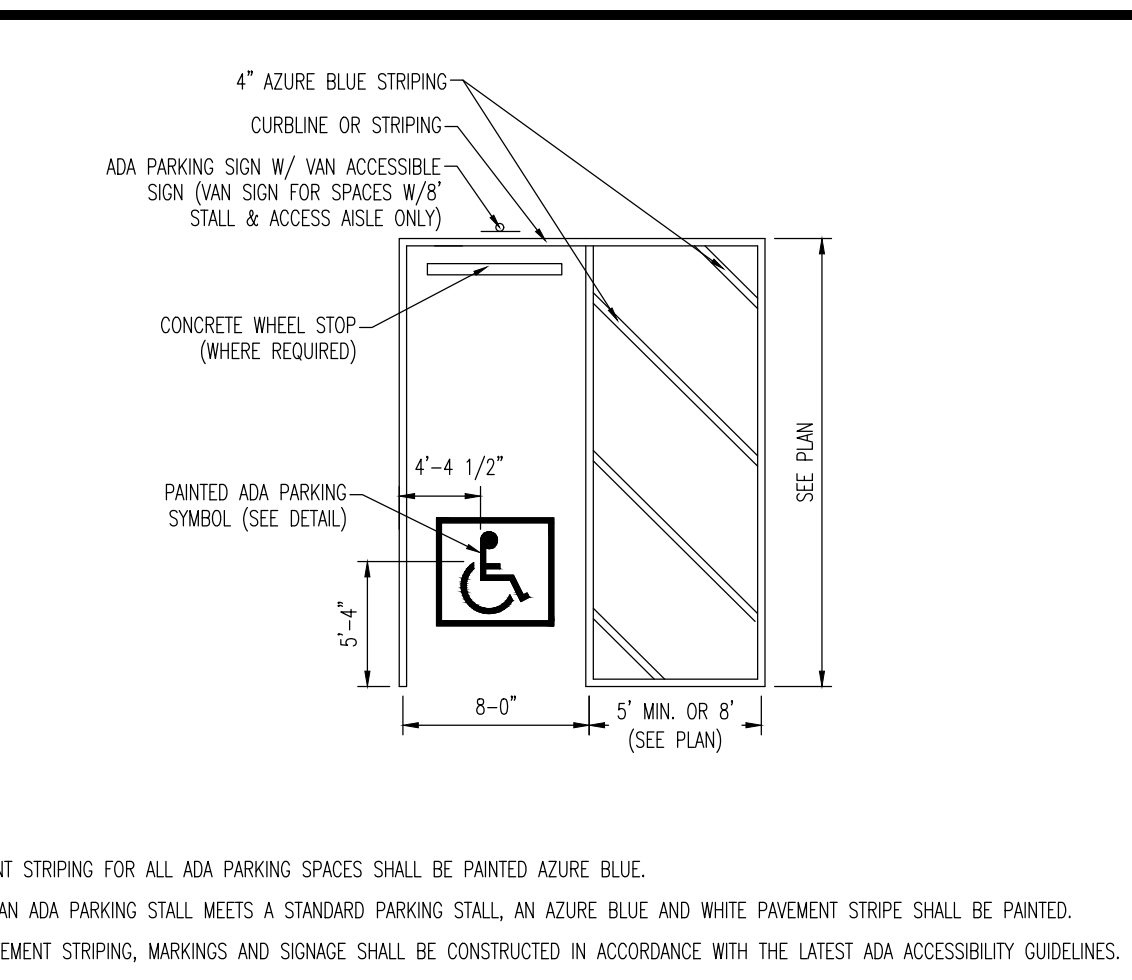
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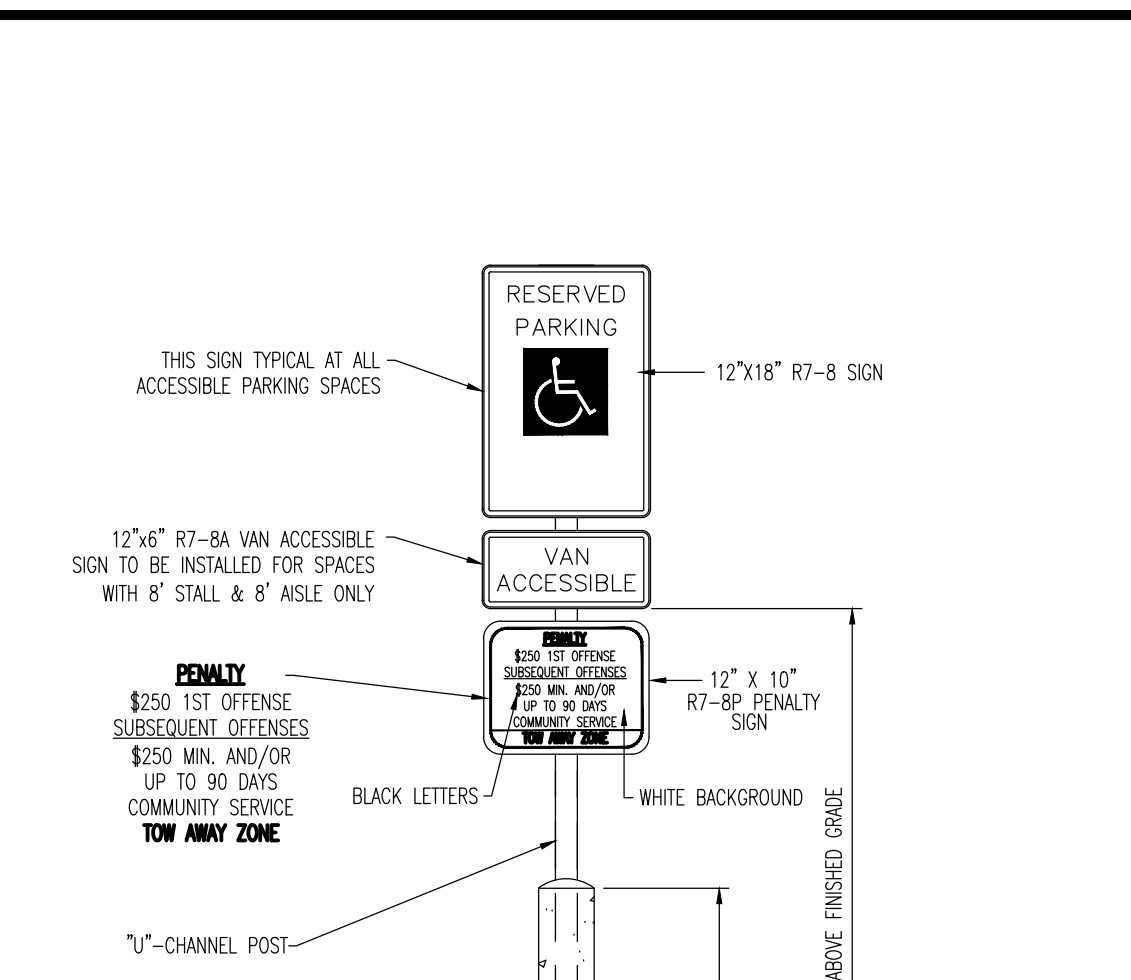
**MEDIUM DUTY PAVEMENT SECTION**  
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**CURB AND WALK DETAIL AT BUILDING**  
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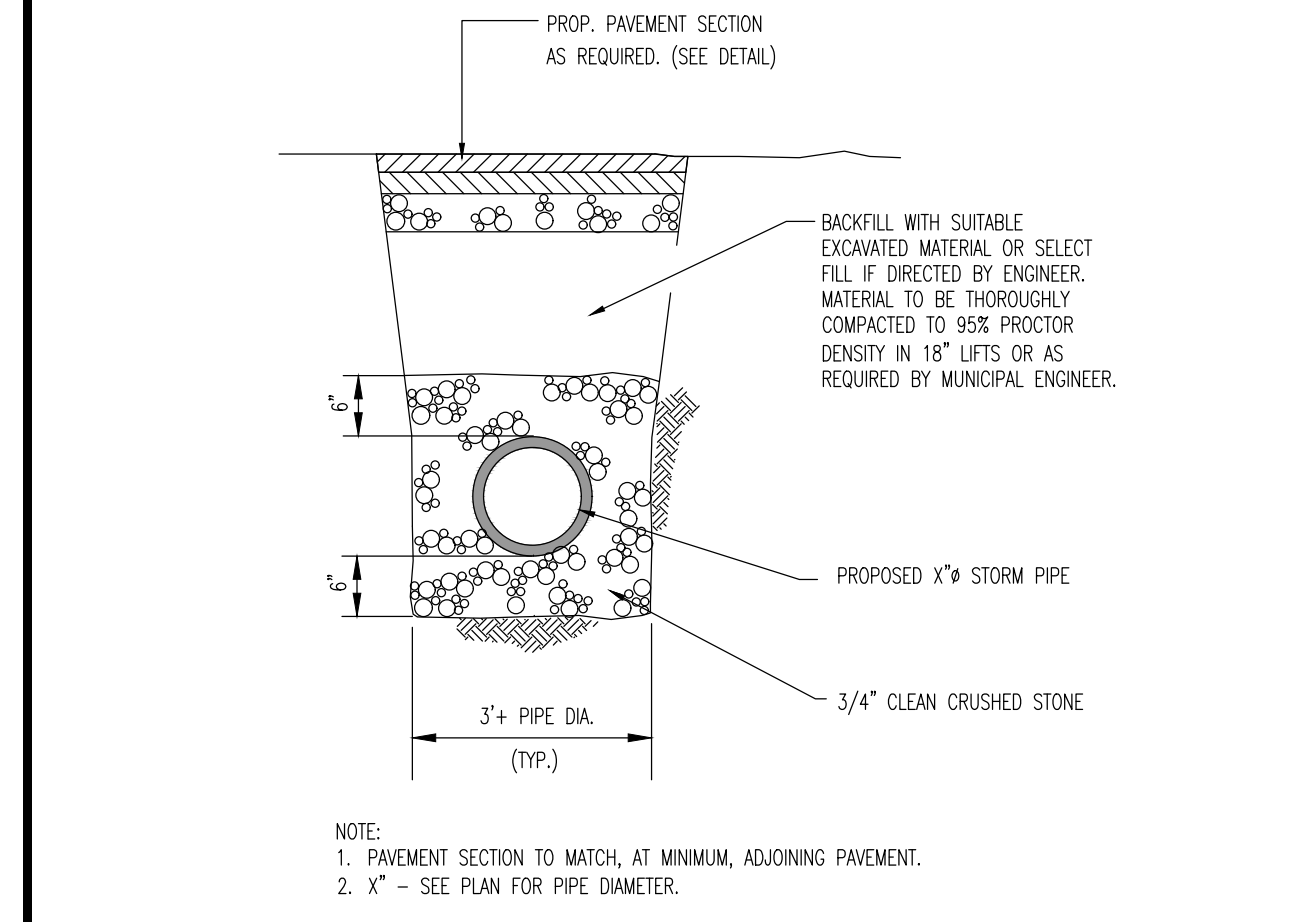


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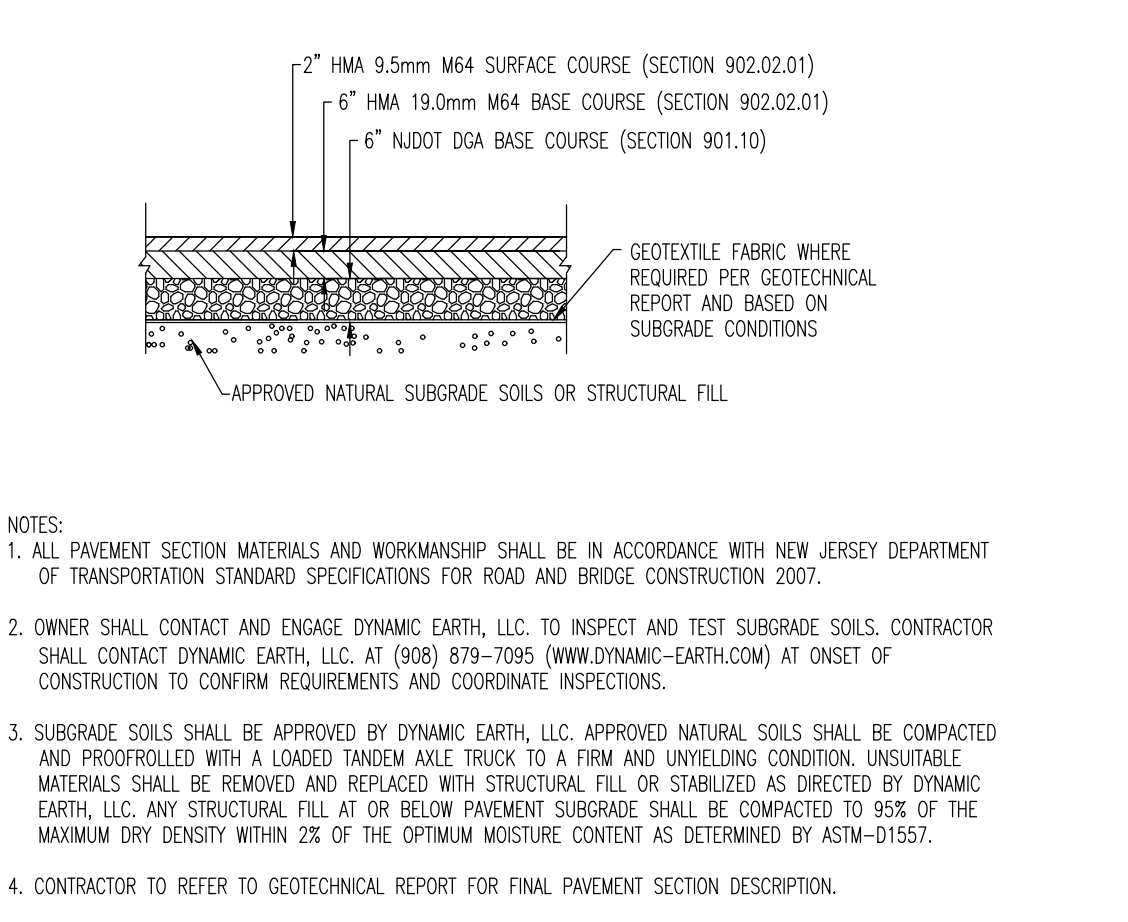


**A.D.A. PARALLEL CURB RAMP DETAIL**  
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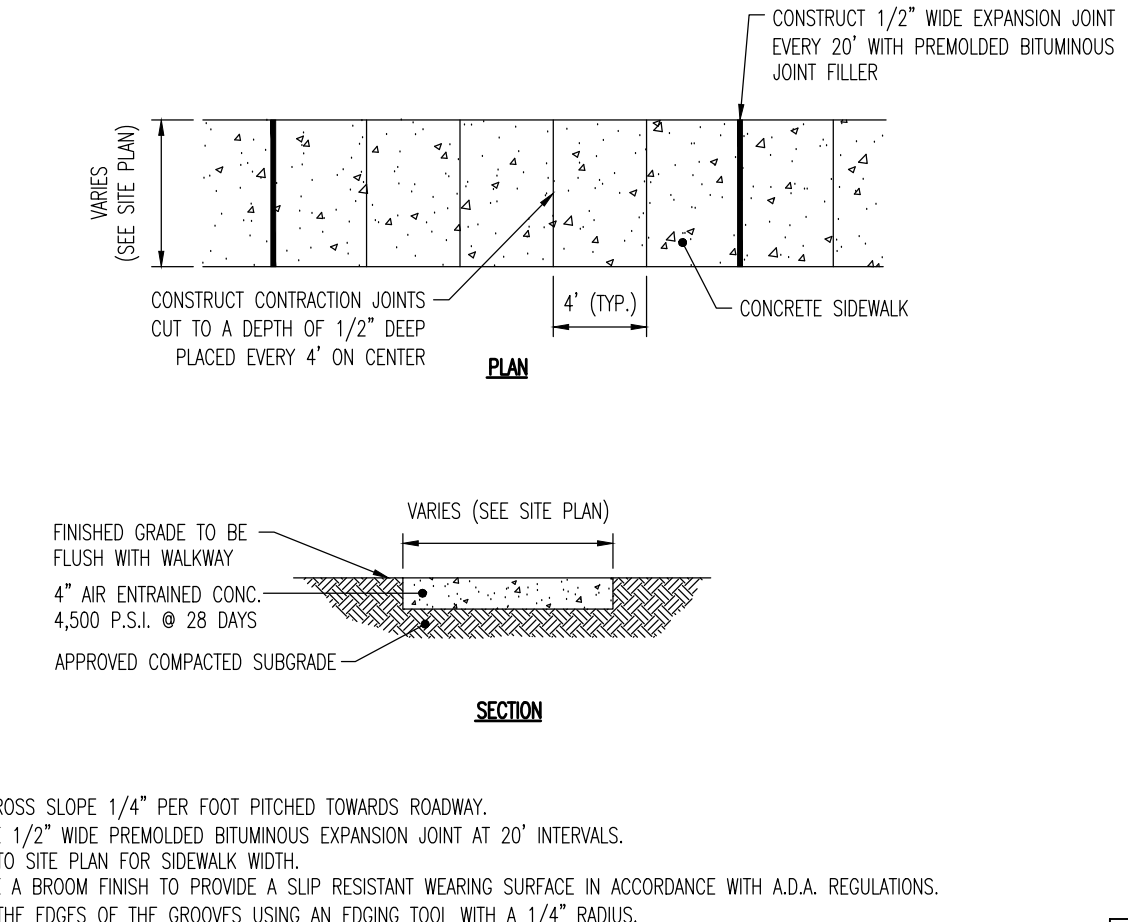
**A.D.A. PARKING SIGN ON BOLLARD DETAIL**  
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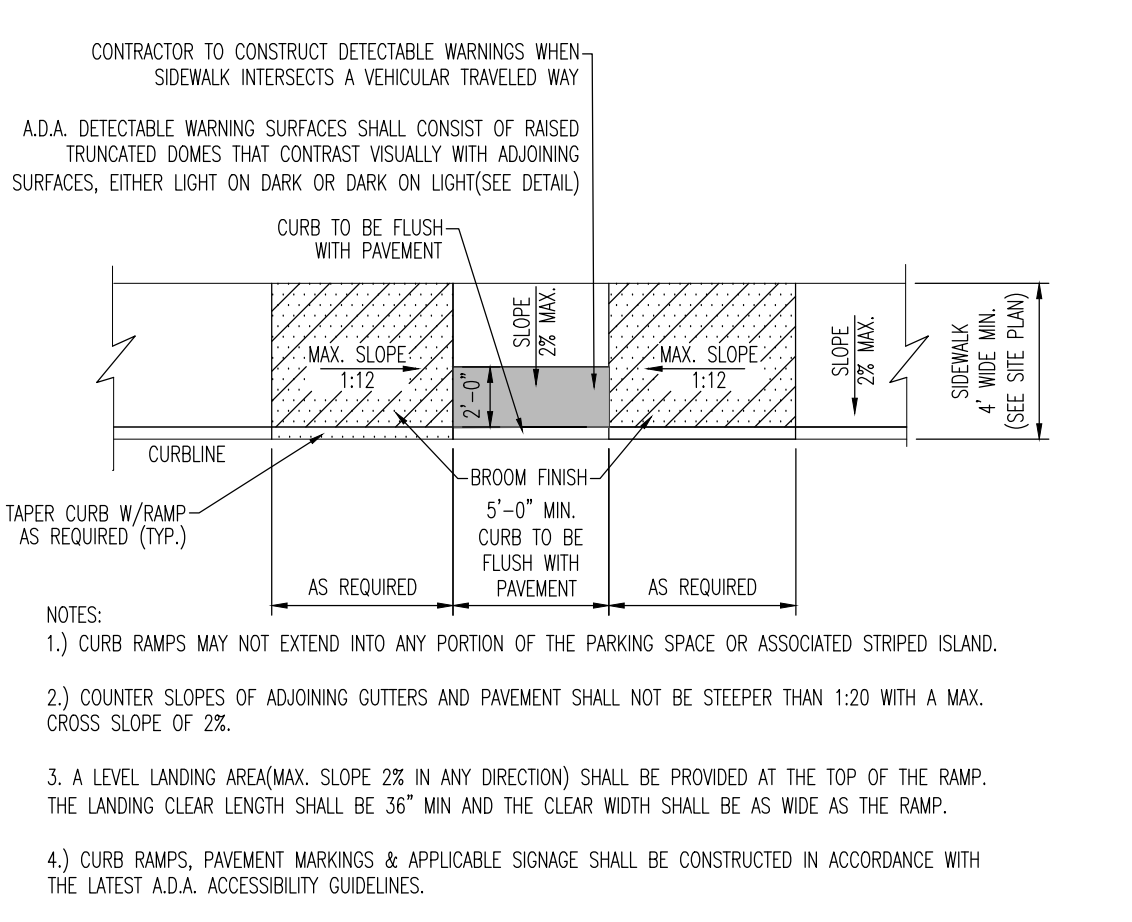
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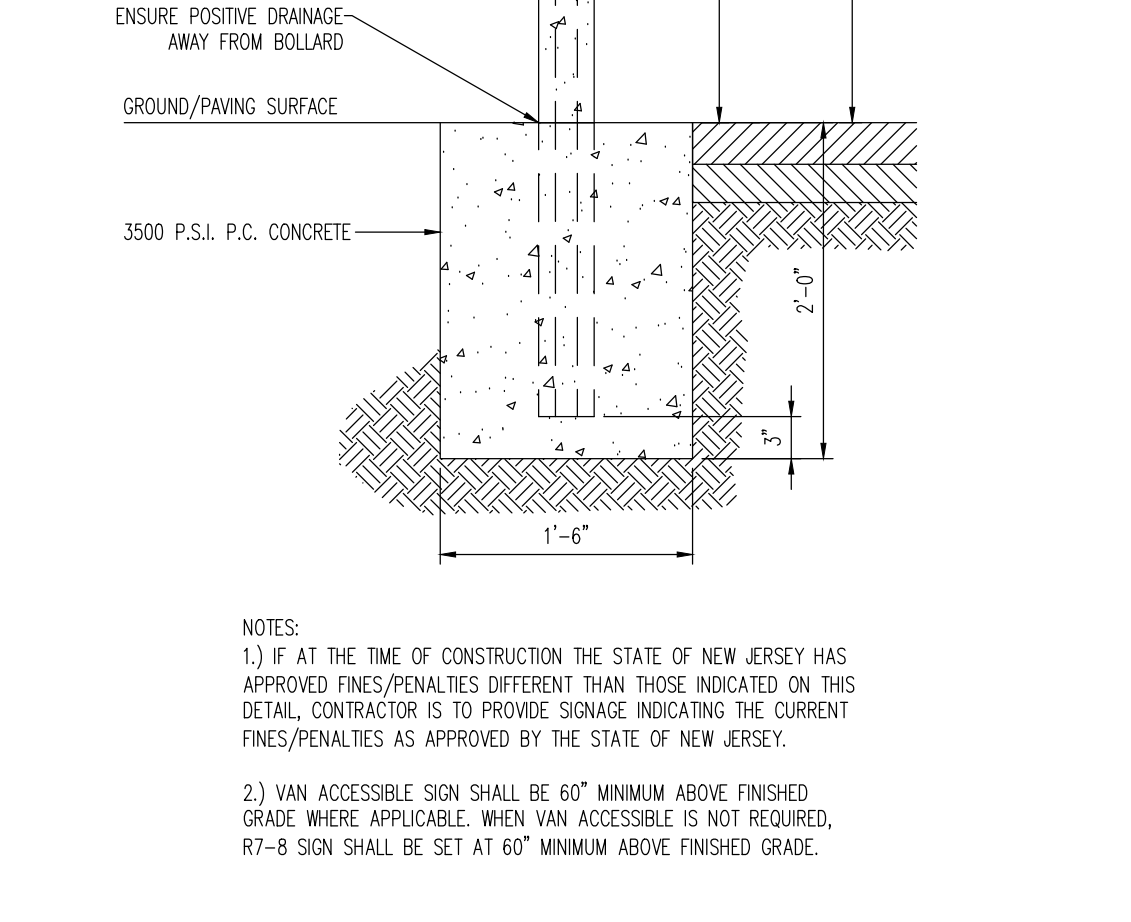
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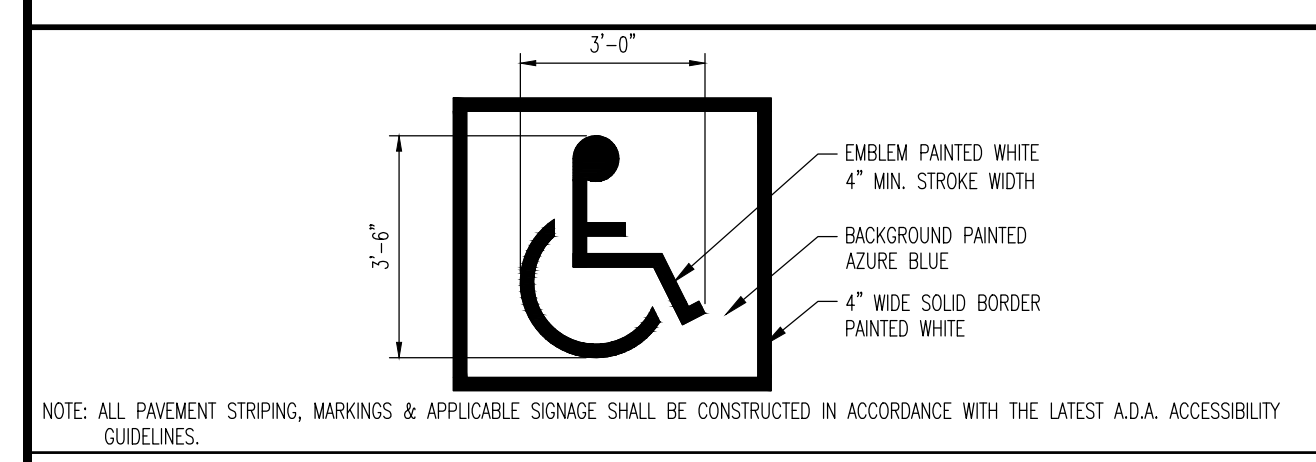
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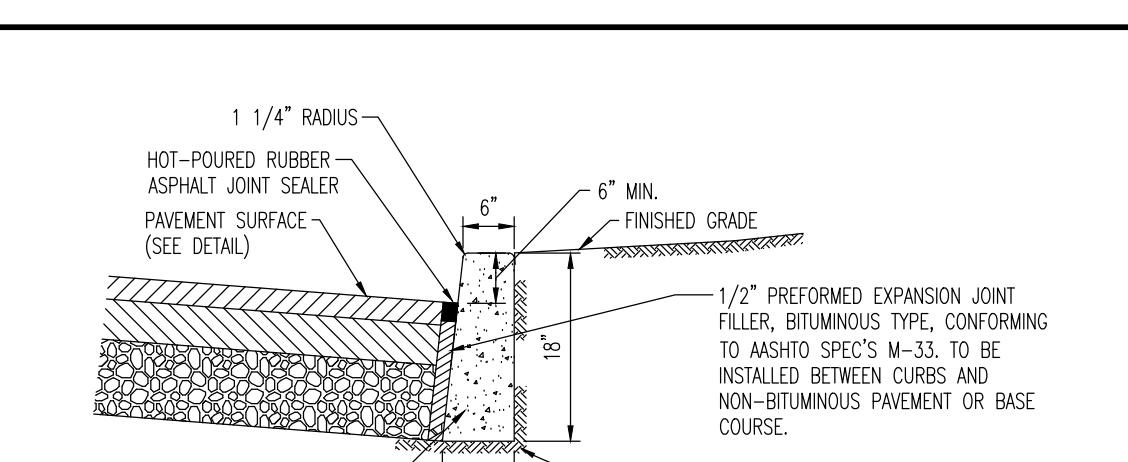
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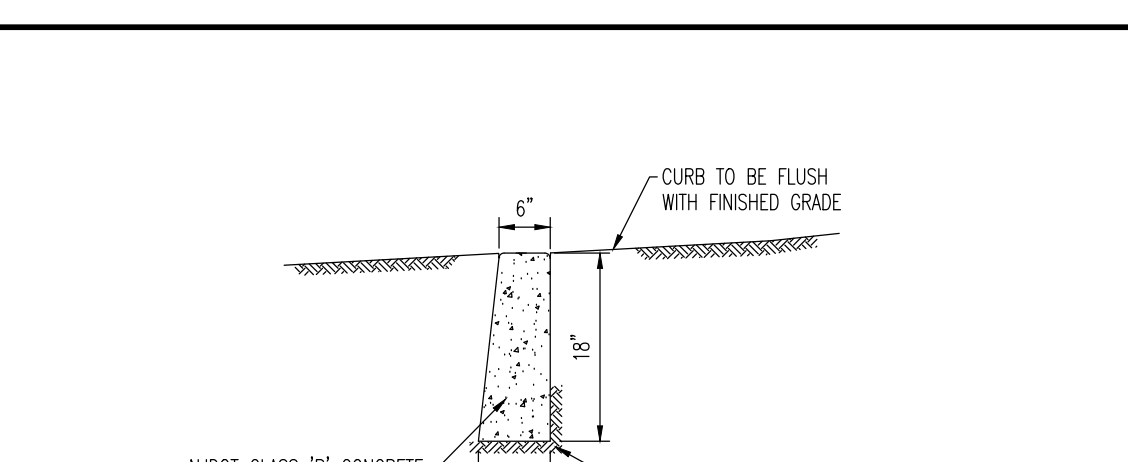
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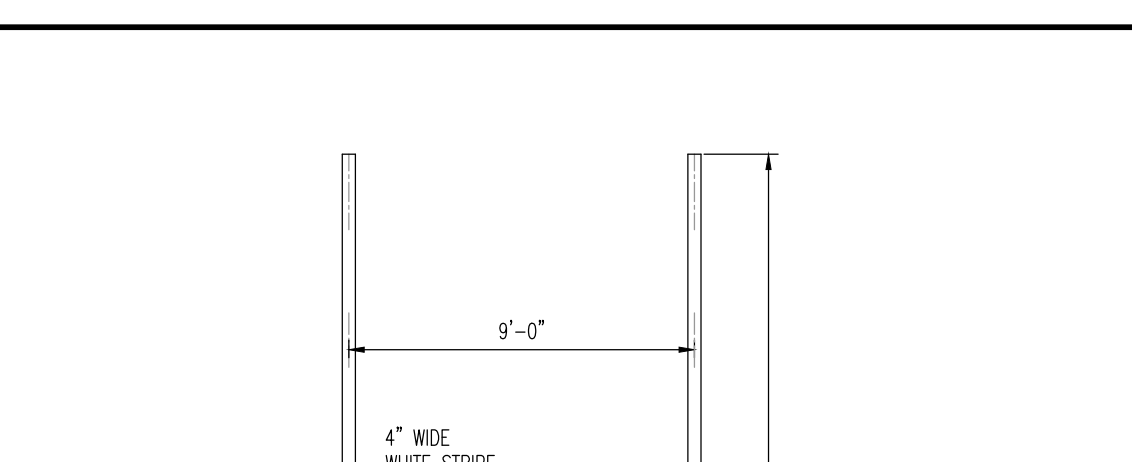
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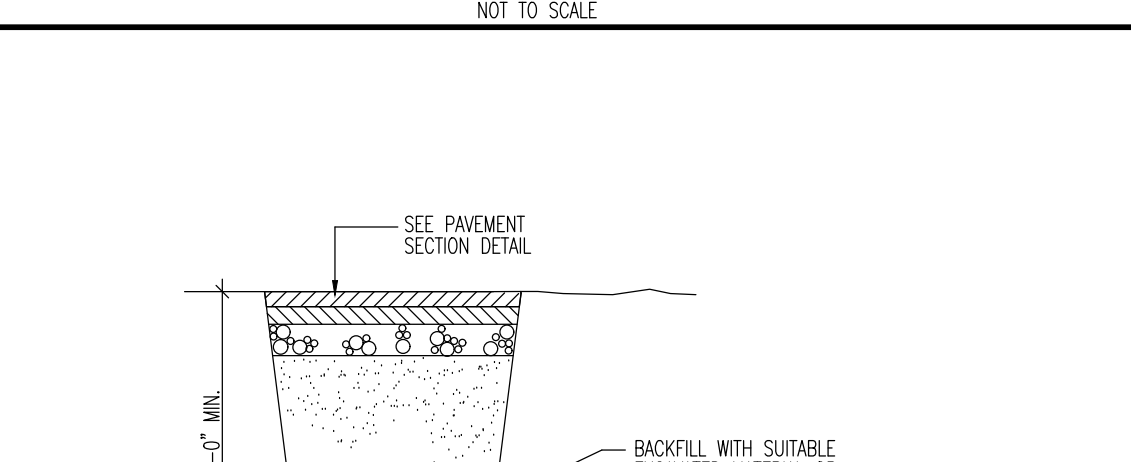
**6" CURB REVEAL**



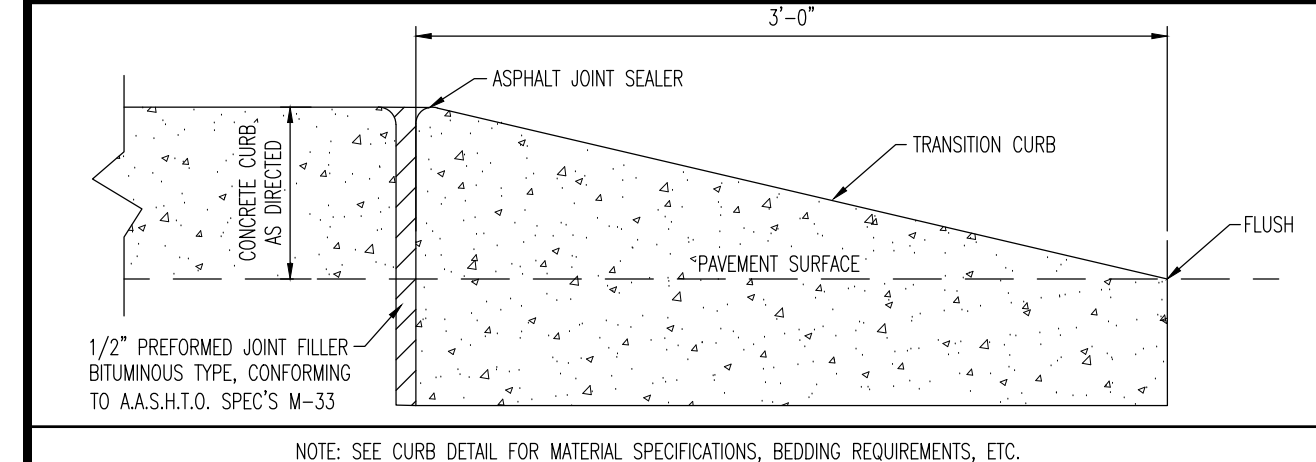
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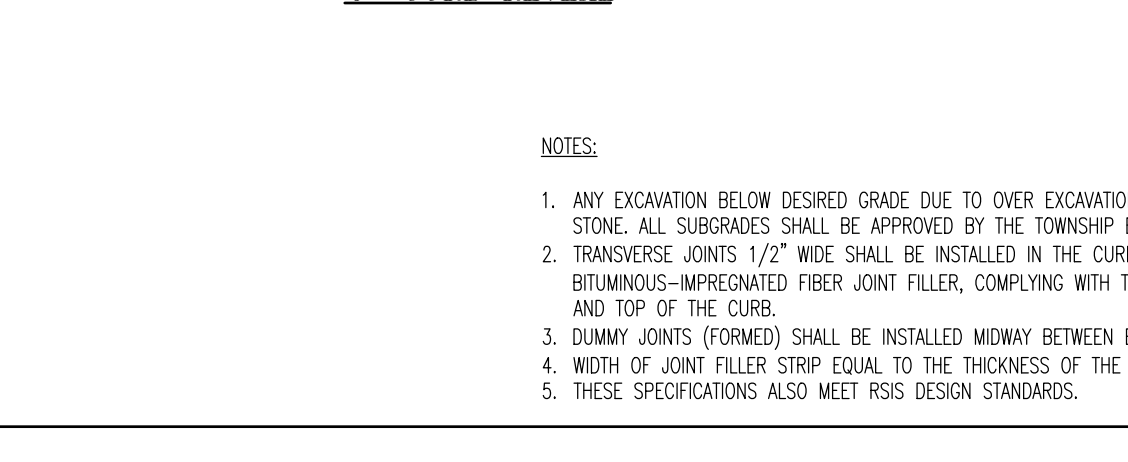
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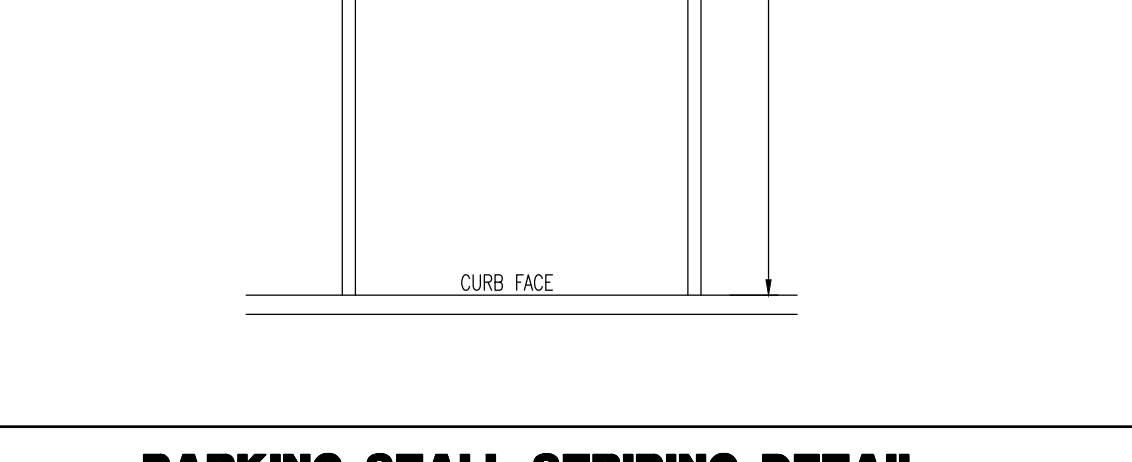
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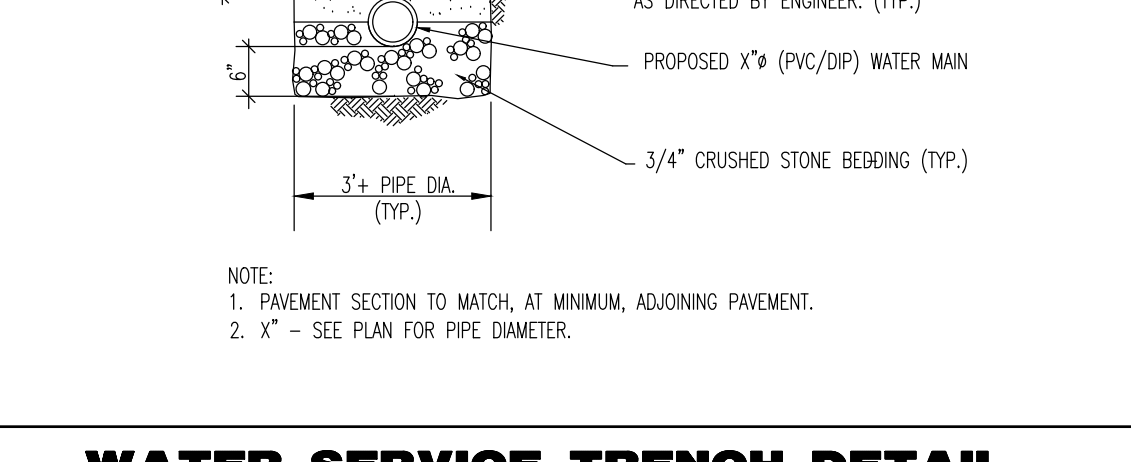
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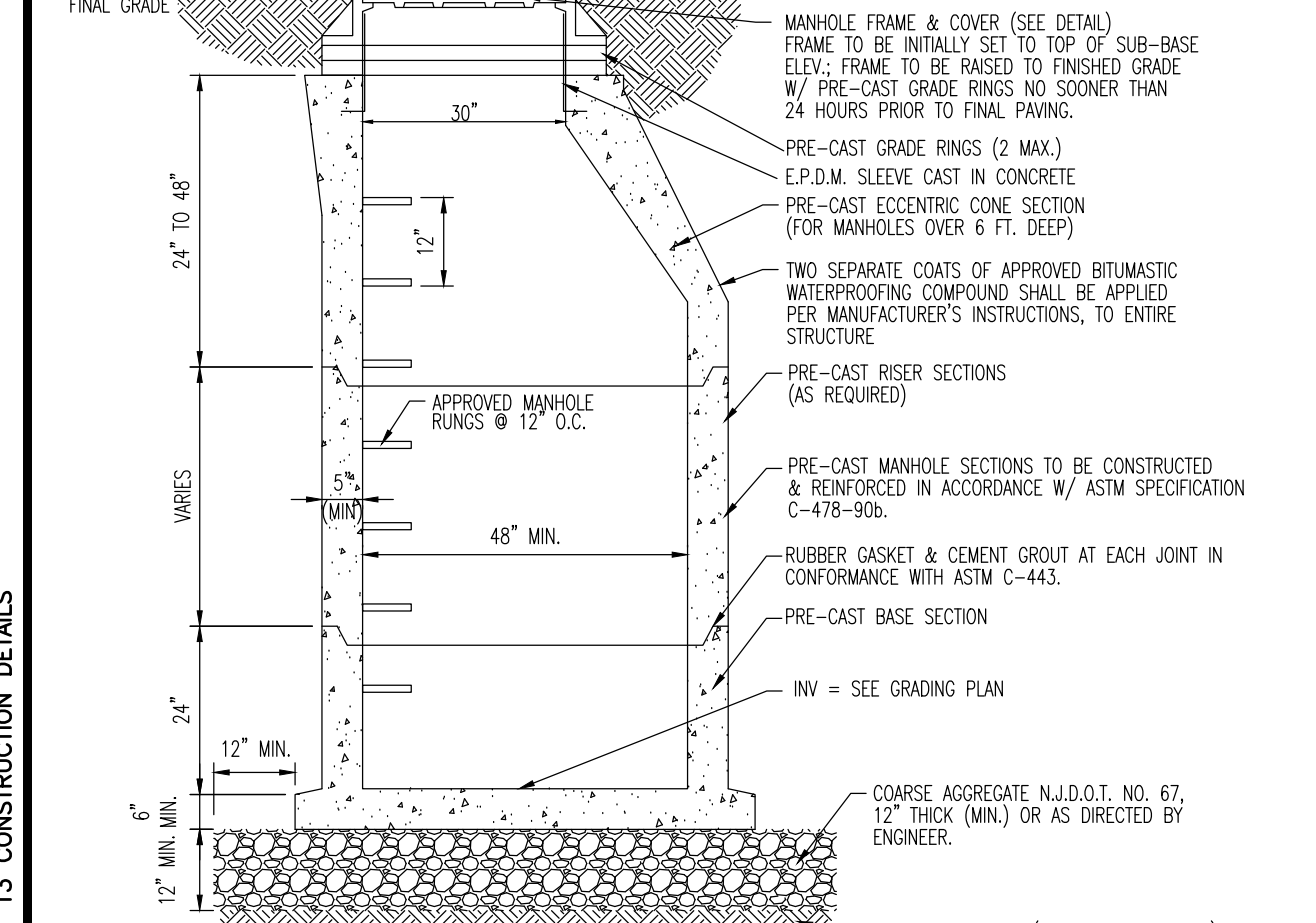
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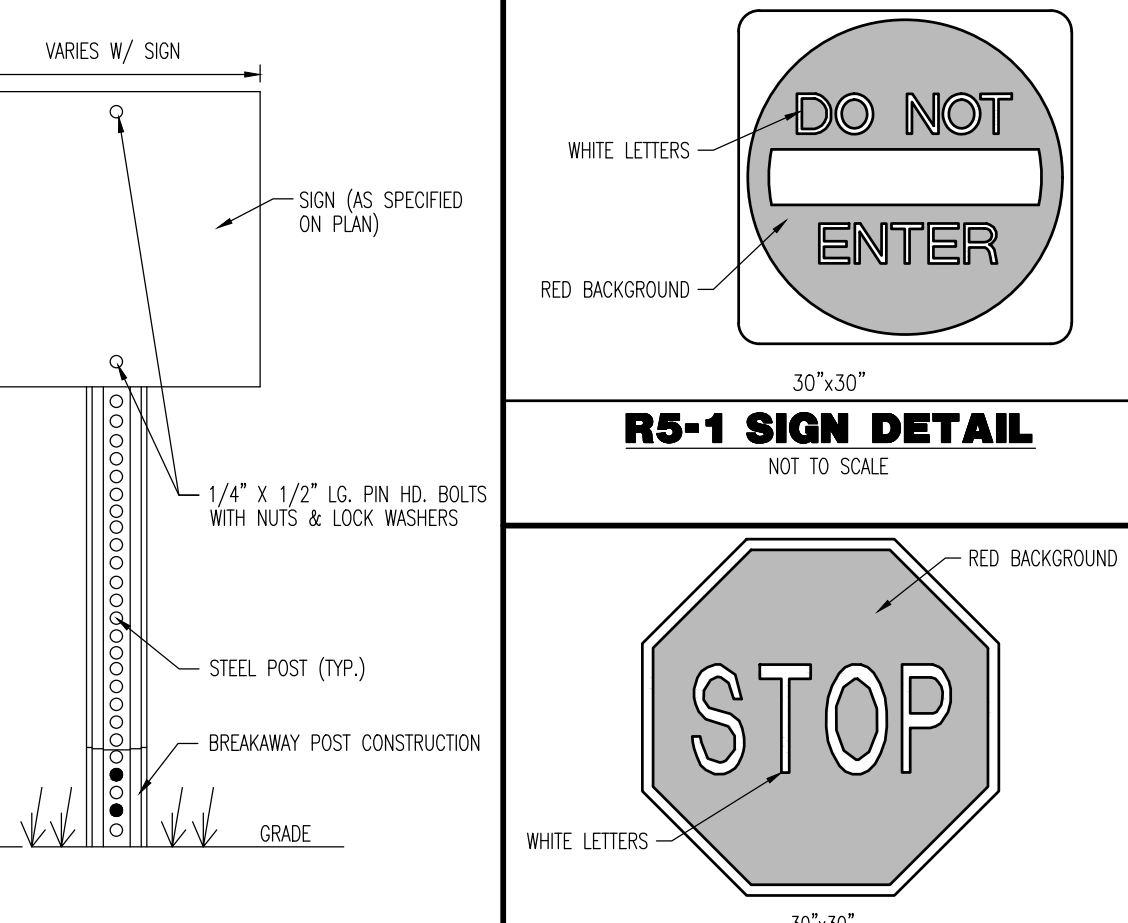
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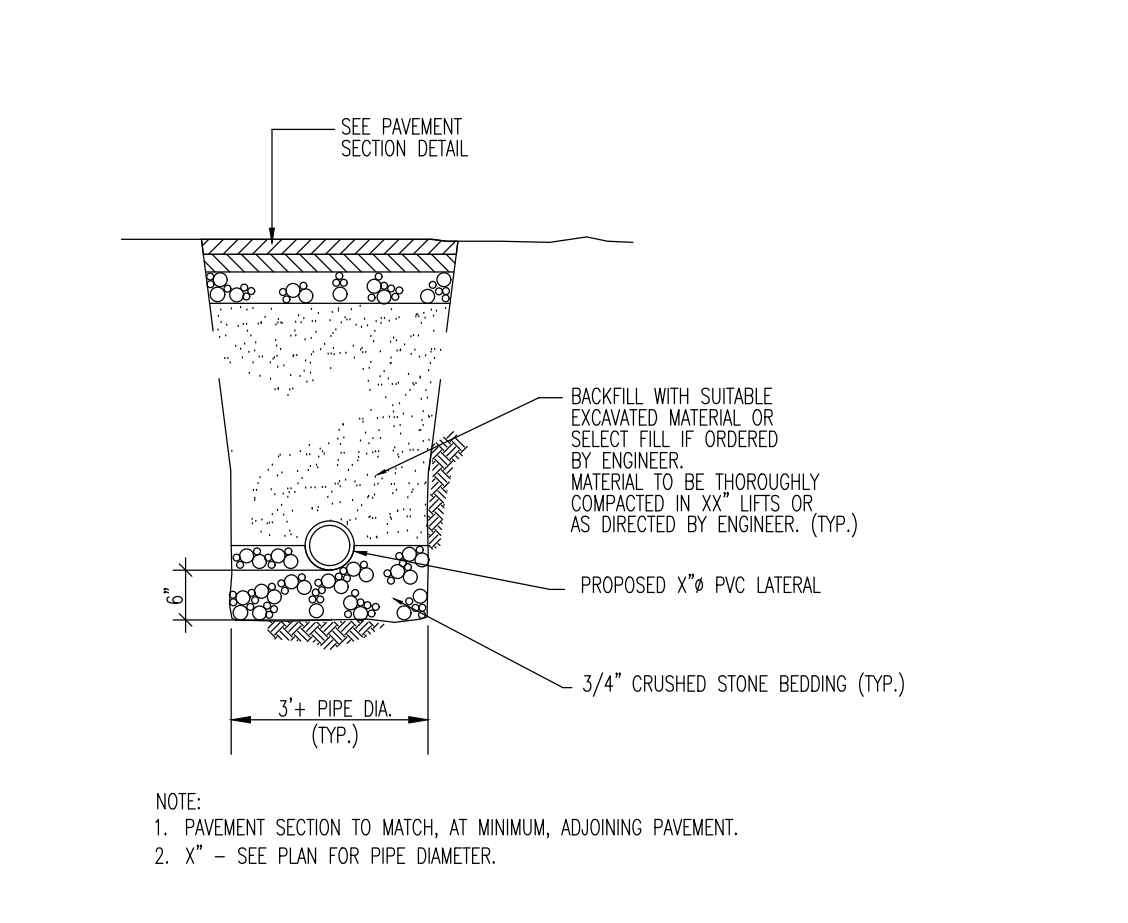
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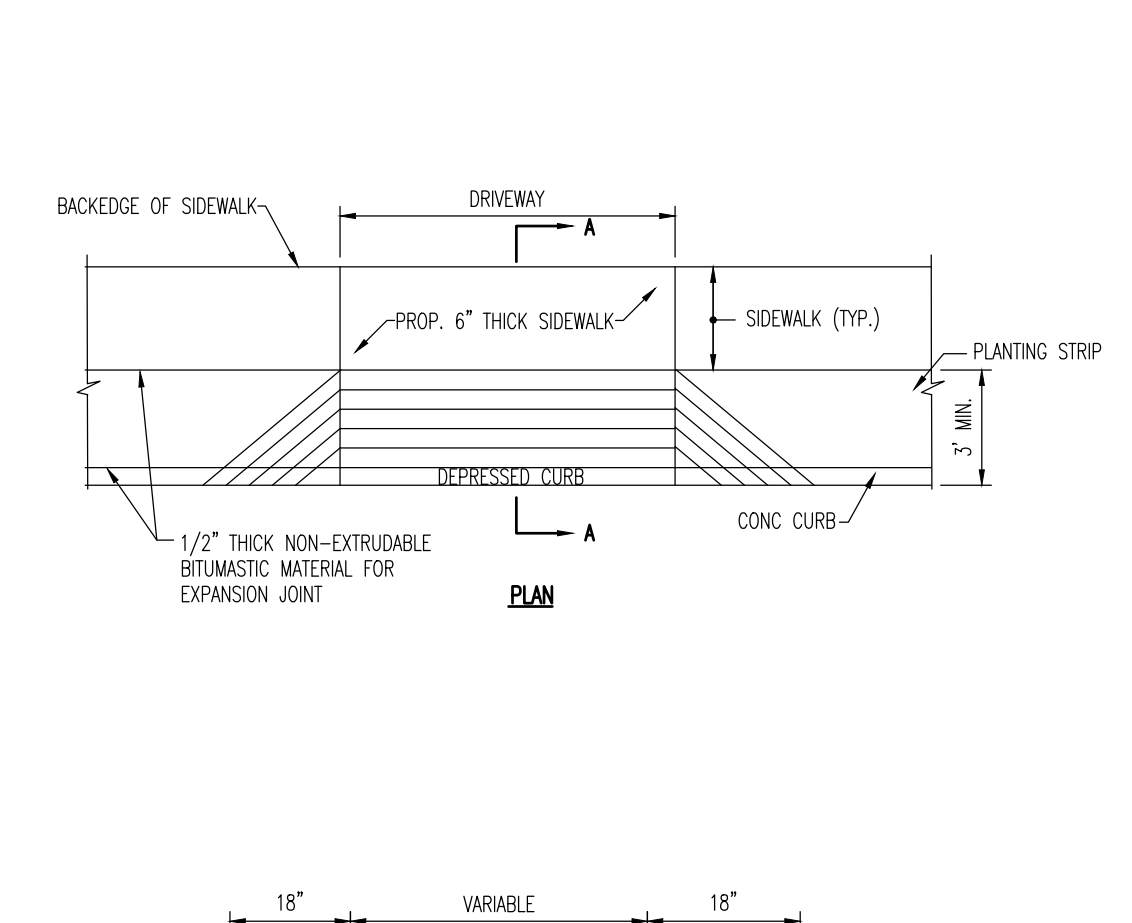
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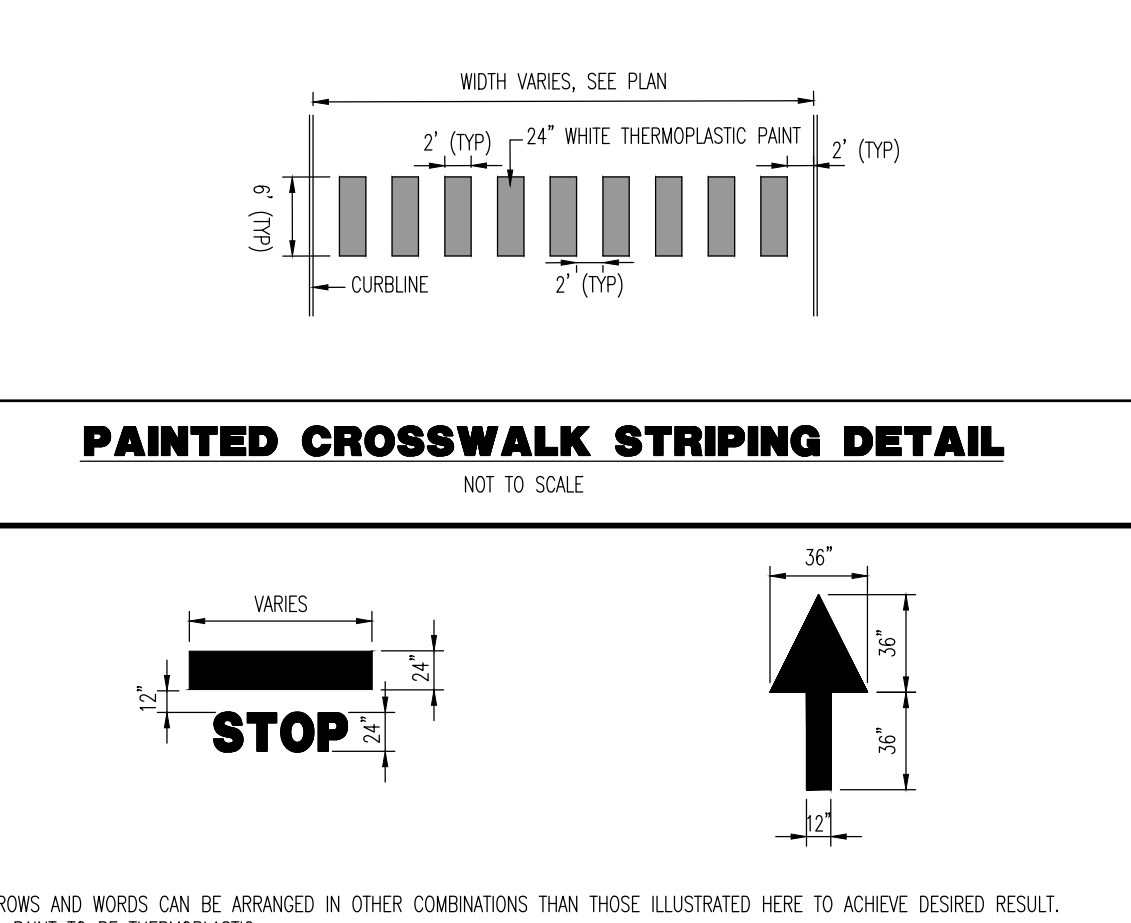
**SIGN POST DETAIL**  
NOT TO SCALE



**SANITARY SEWER TRENCH DETAIL**  
NOT TO SCALE

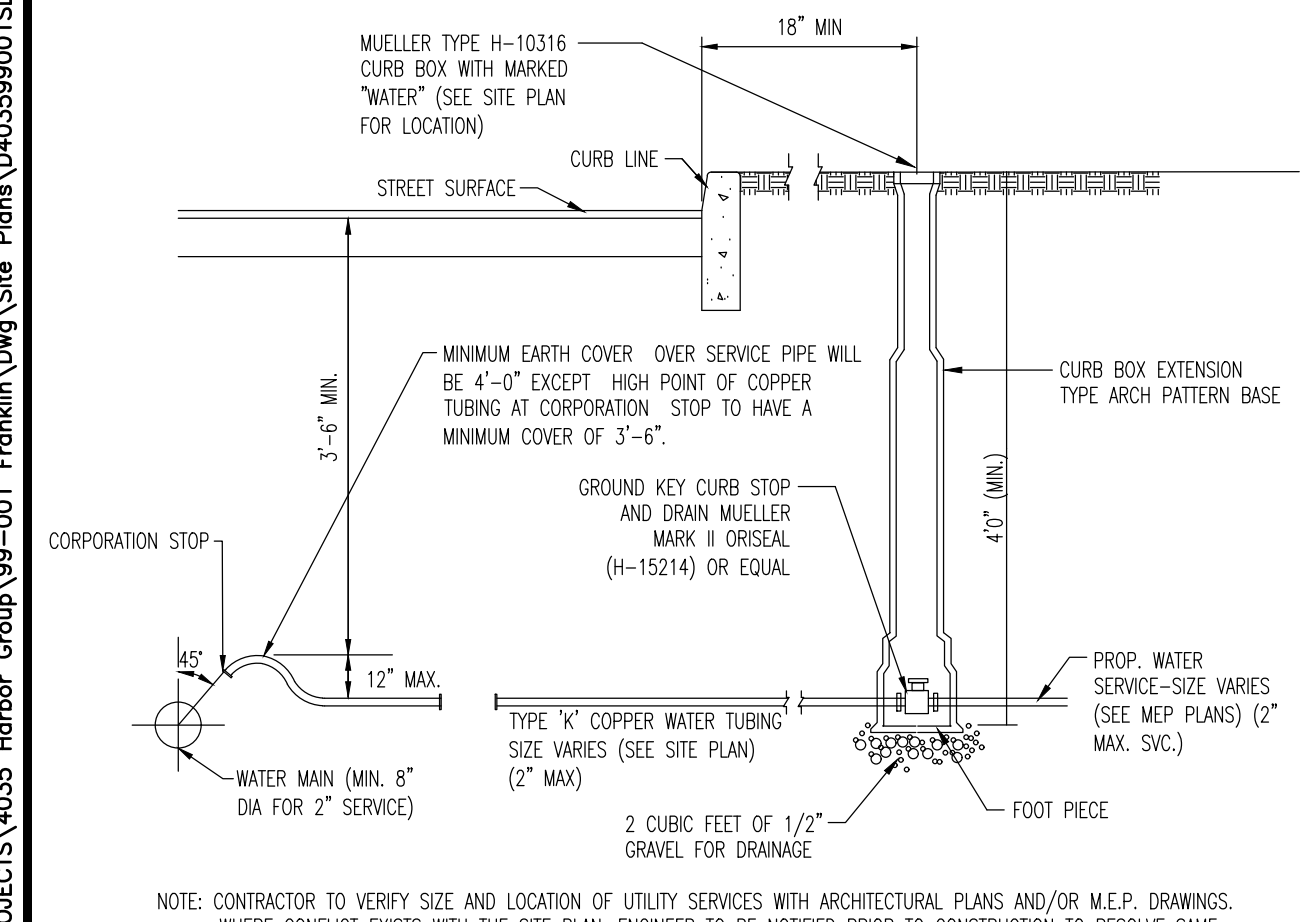


**DEPRESSED CURB & CONCRETE APRON AT DRIVEWAY DETAIL**  
NOT TO SCALE

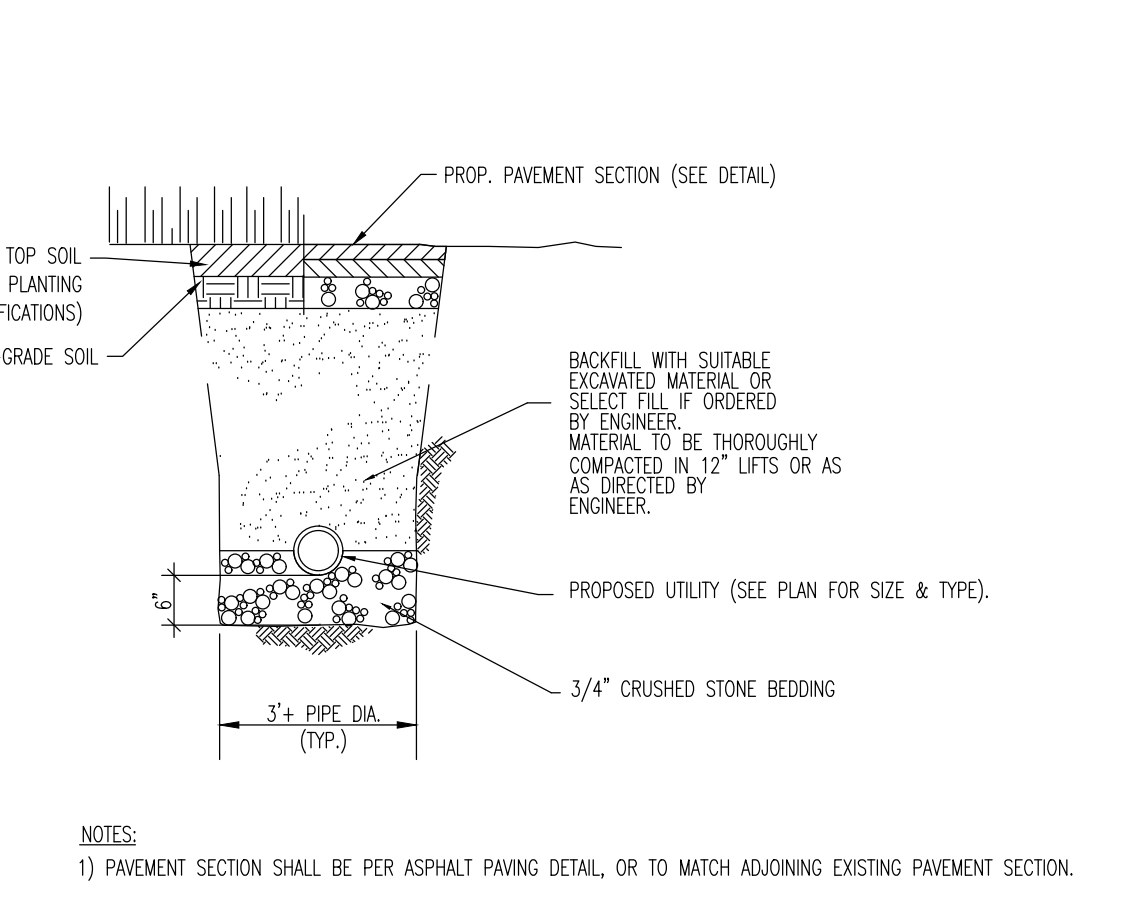


**PAINTED CROSSWALK STRIPING DETAIL**  
NOT TO SCALE

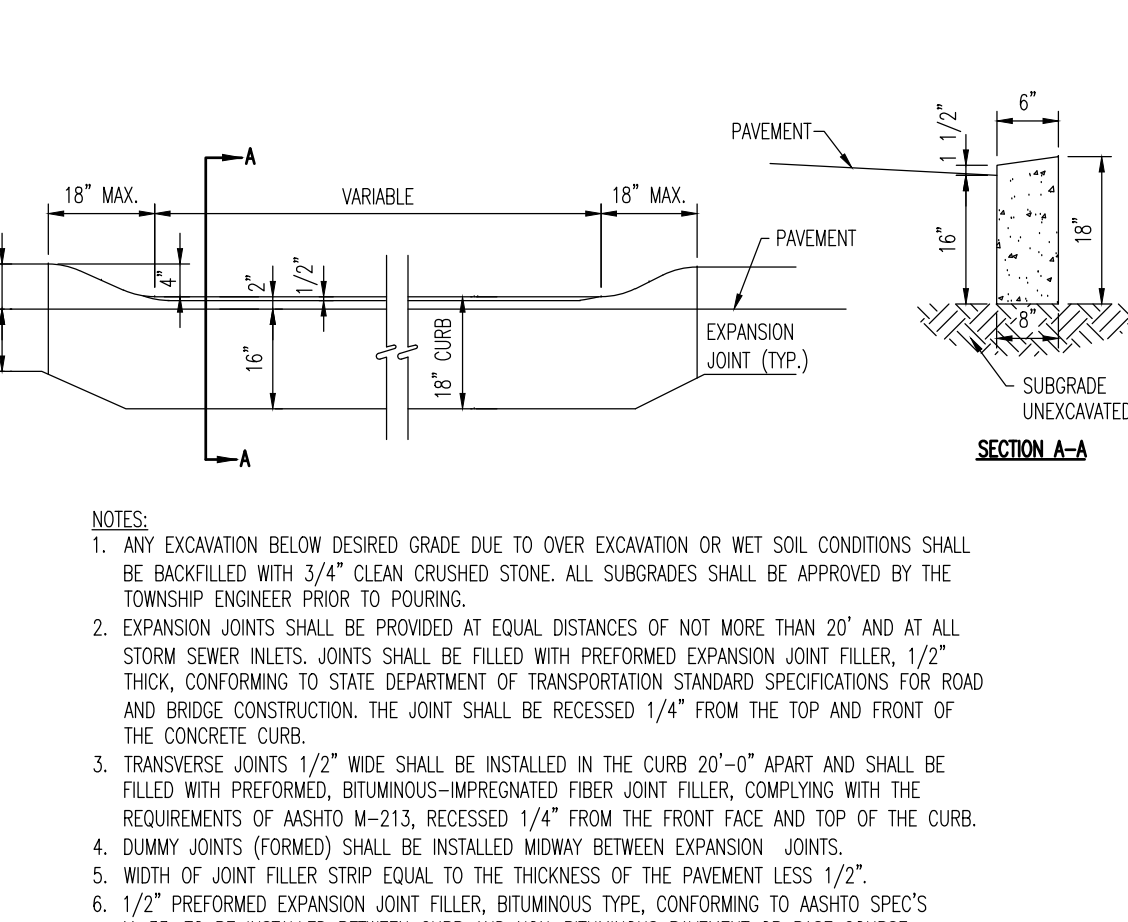
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NOT TO SCALE



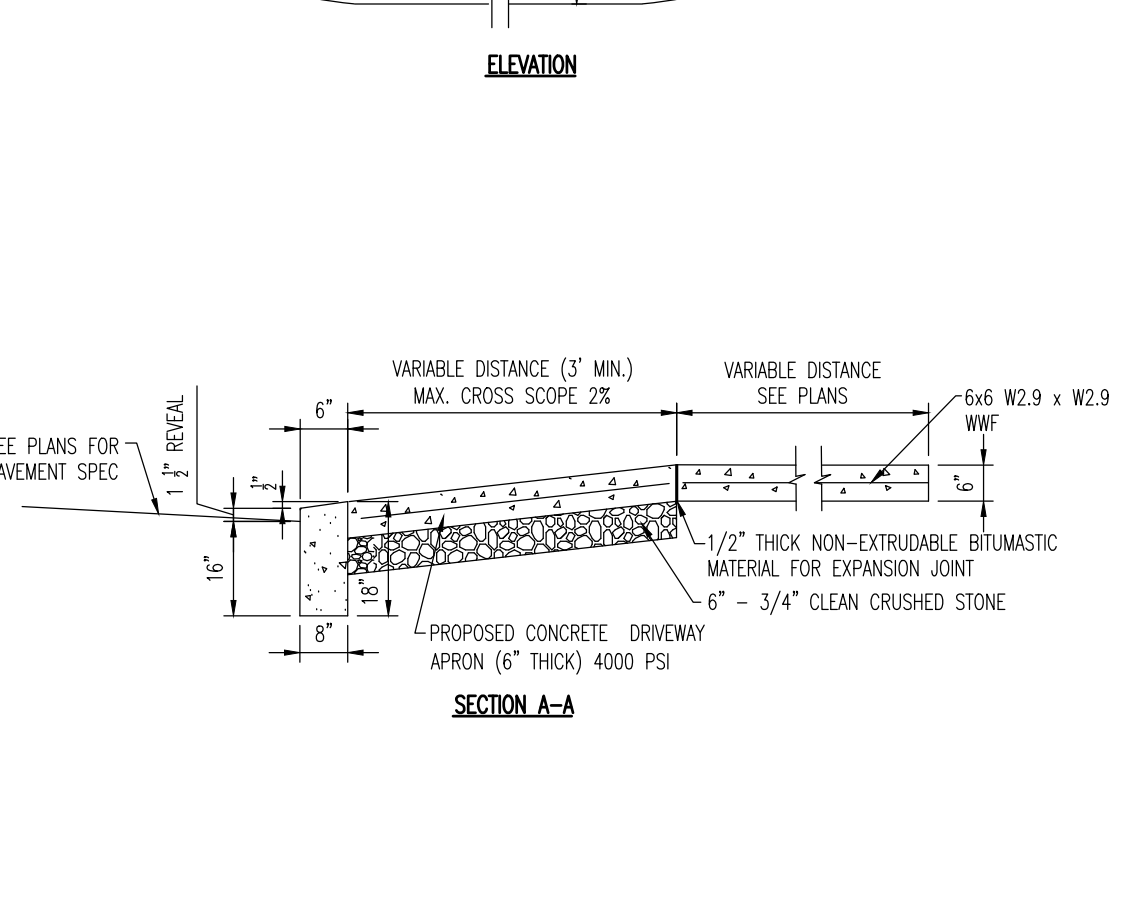
**WATER SERVICE CONNECTION**  
NOT TO SCALE



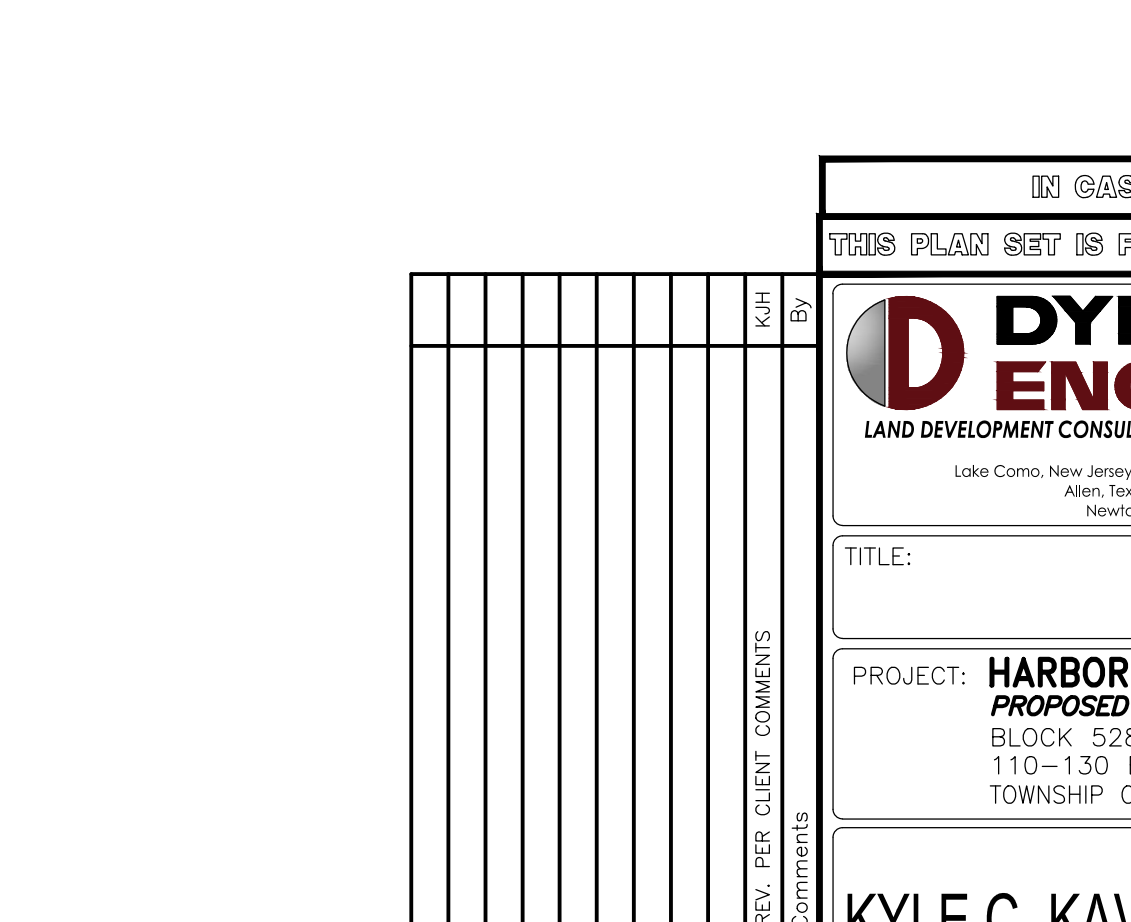
**UTILITY SERVICE TRENCH DETAIL**  
NOT TO SCALE



**DEPRESSED CURB & CONCRETE APRON AT DRIVEWAY DETAIL**  
NOT TO SCALE



**DEPRESSED CURB & CONCRETE APRON AT DRIVEWAY DETAIL**  
NOT TO SCALE



**PAINTED MARKING DETAILS**  
NOT TO SCALE

Project: 01/20/22 - 10:15 AM, By: kene...  
 File: 13-CONSTRUCTION DETAILS  
 13-CONSTRUCTION DETAILS

IN CASE OF DISCREPANCY, TOWNSHIP STANDARD DETAILS SHALL HOLD  
 THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

**DYNAMIC ENGINEERING**  
 LAND DEVELOPMENT CONSULTING • PERMITTING • GEOTECHNICAL • ENVIRONMENTAL • SURVEY • PLANNING & DESIGN

1984 Main Street  
 Lake Como, NJ 07046  
 Phone: 973.264.0200 | Fax: 973.264.0201  
 Email: info@dynamiceng.com

1100-150 BELMONT DRIVE  
 TOWNSHIP OF FRANKLIN, SOMERSET COUNTY, NEW JERSEY

**KYLE C. KAVINSKI** PROFESSIONAL ENGINEER  
 NEW JERSEY LICENSE NO. 52985

**JOSHUA M. SEWALD** PROFESSIONAL ENGINEER  
 NEW JERSEY LICENSE NO. 52908

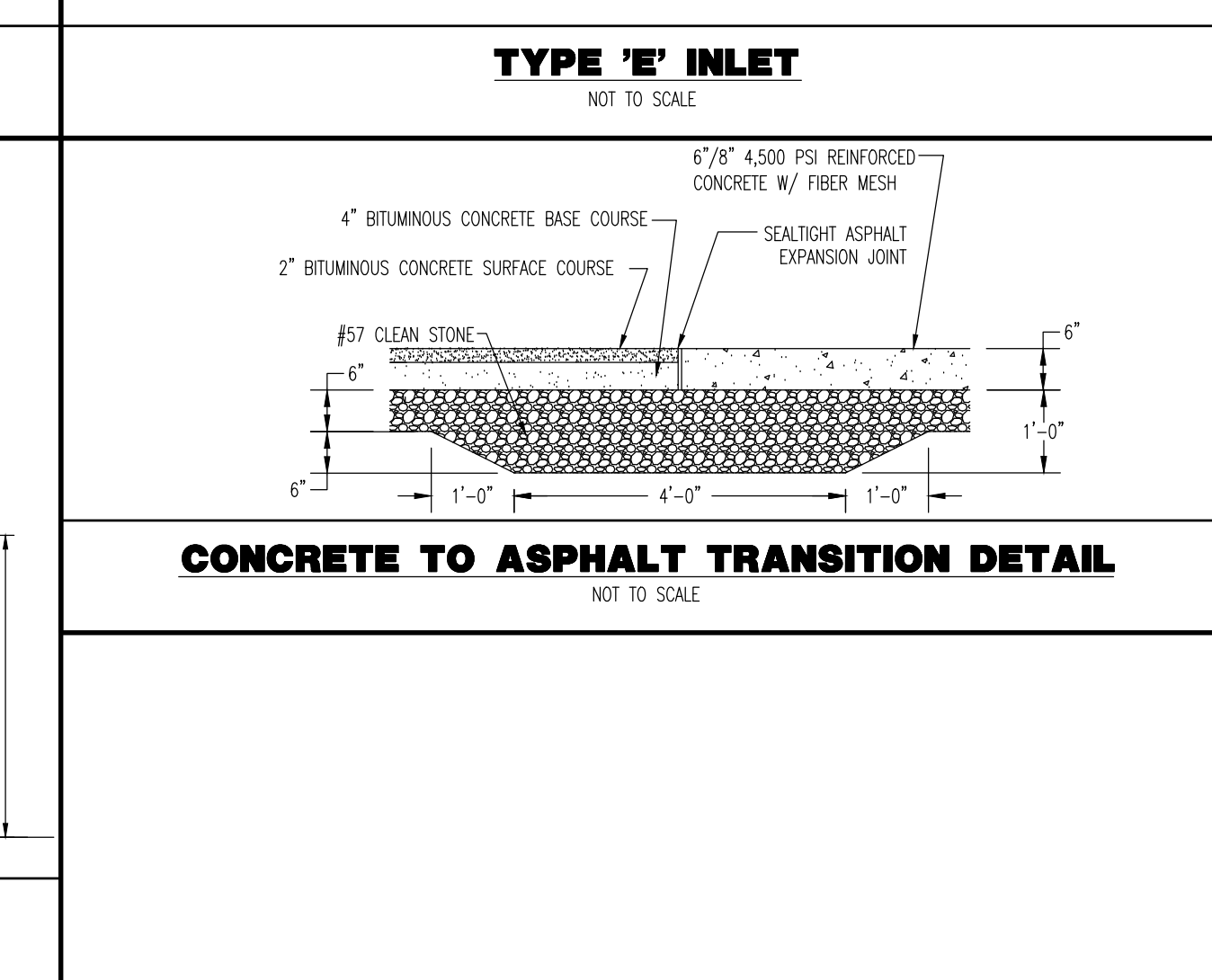
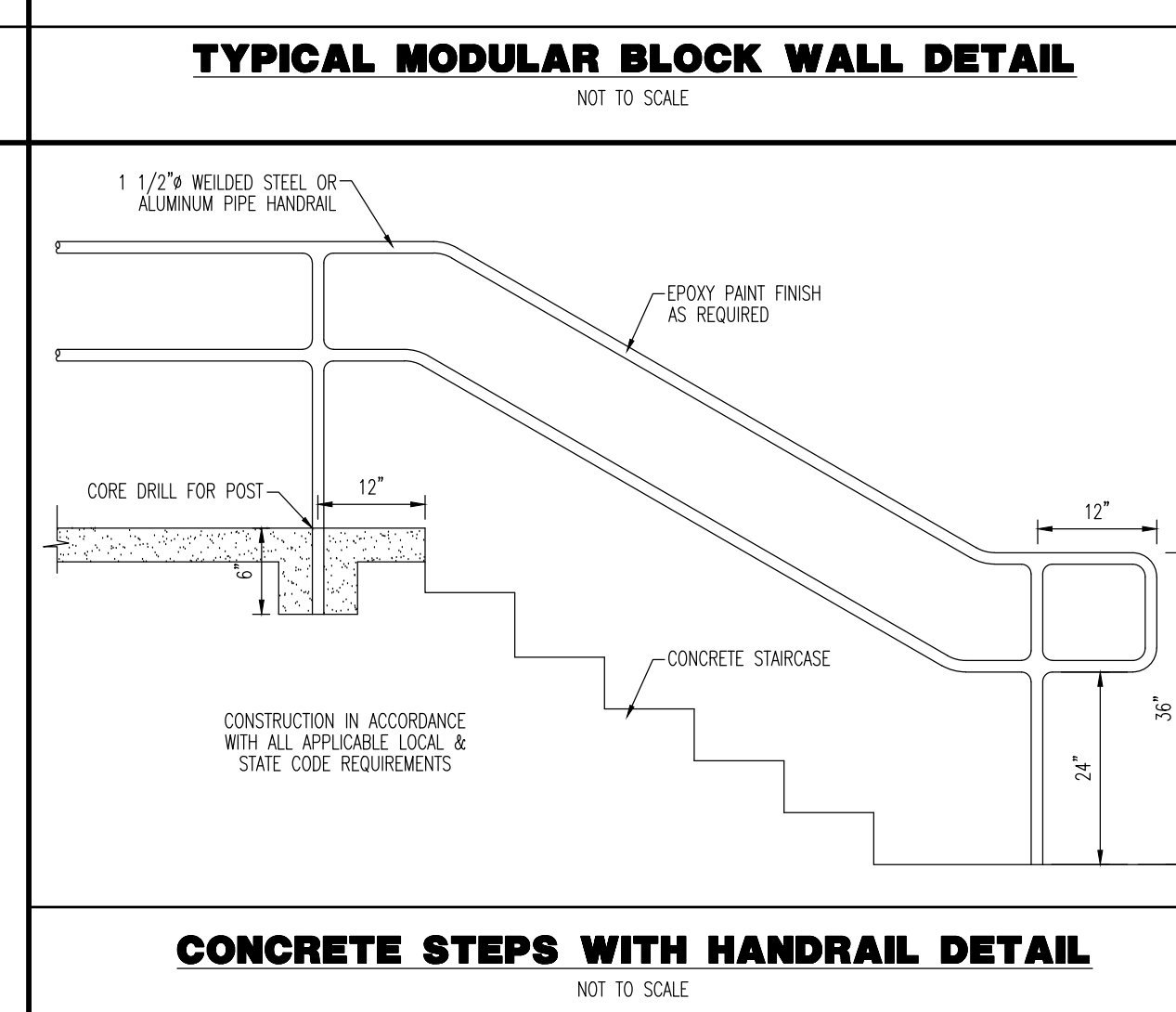
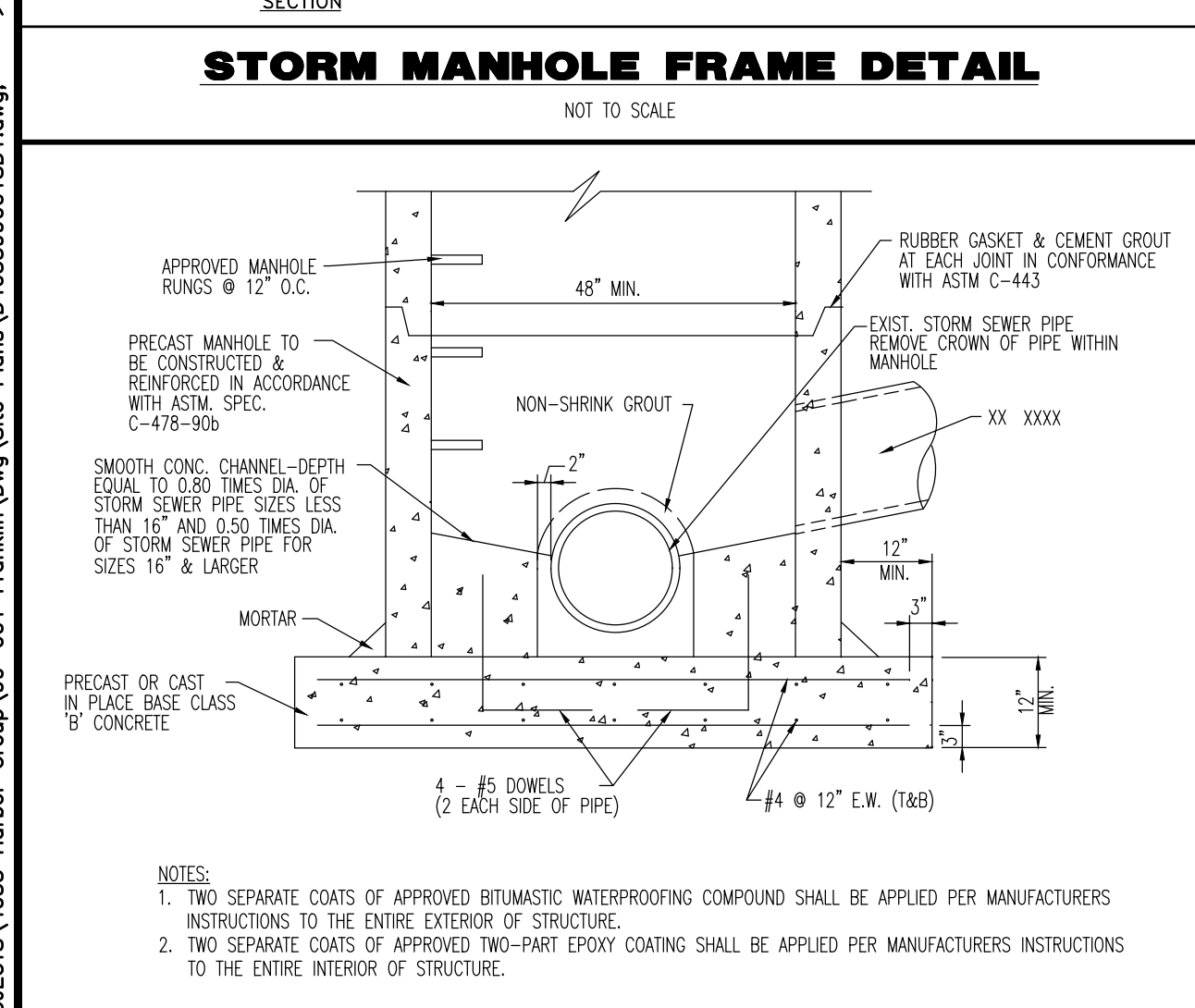
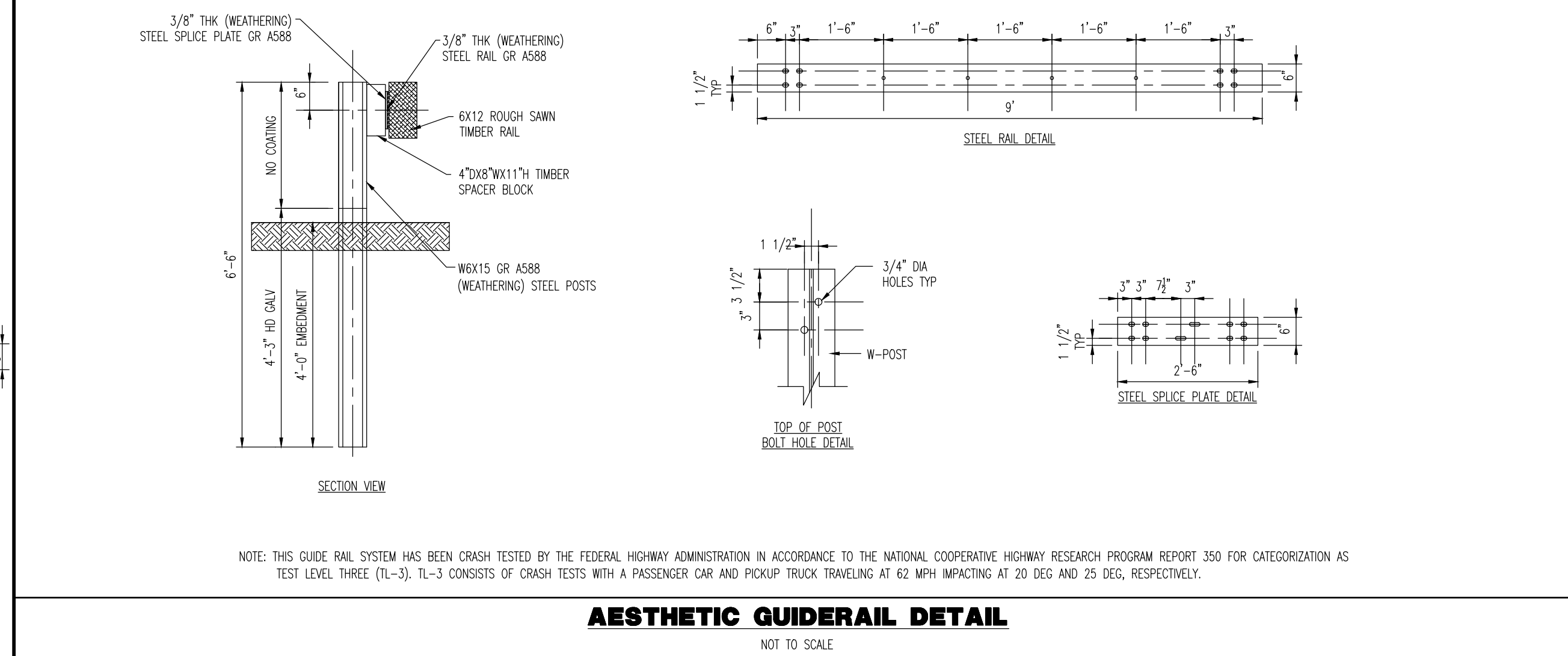
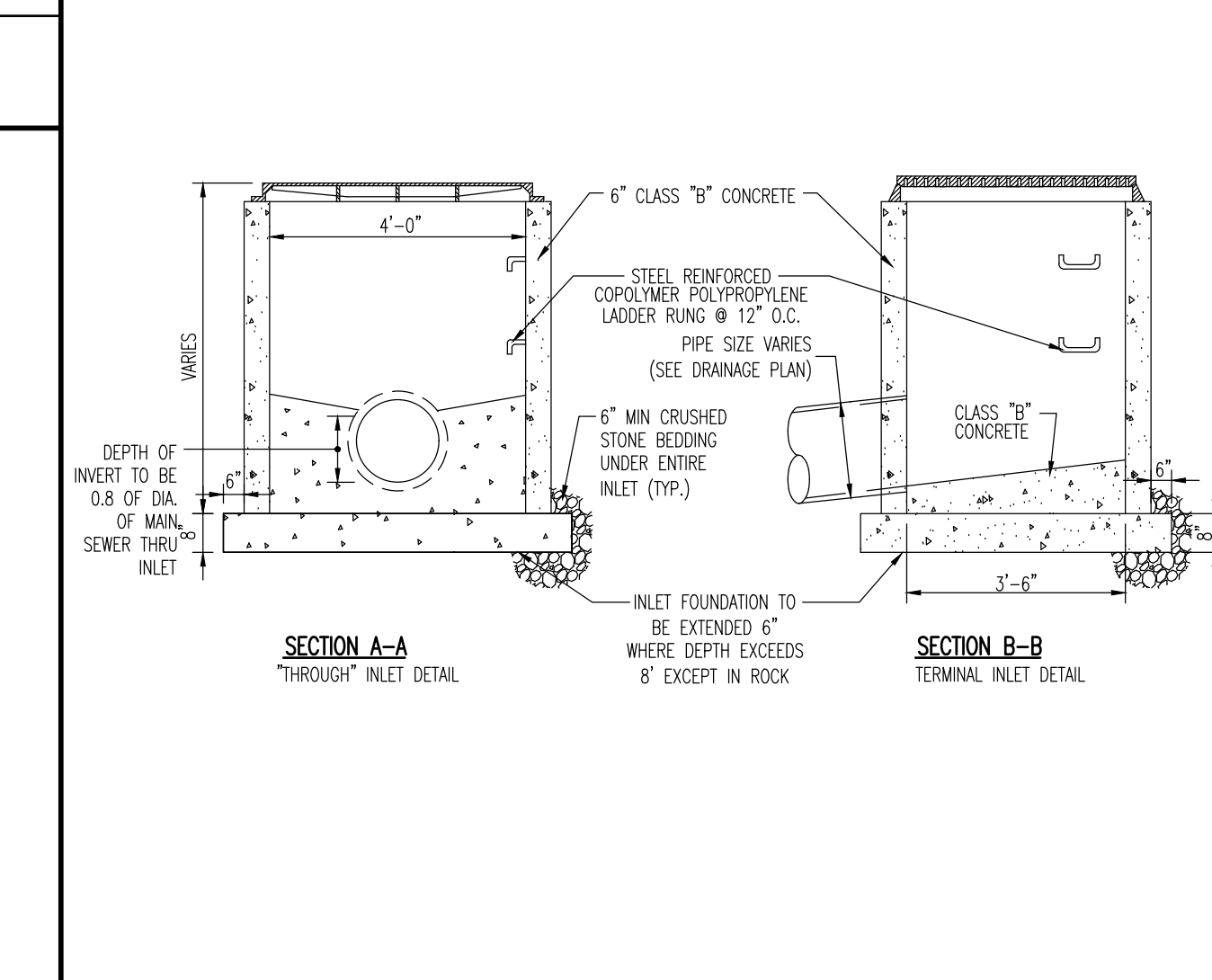
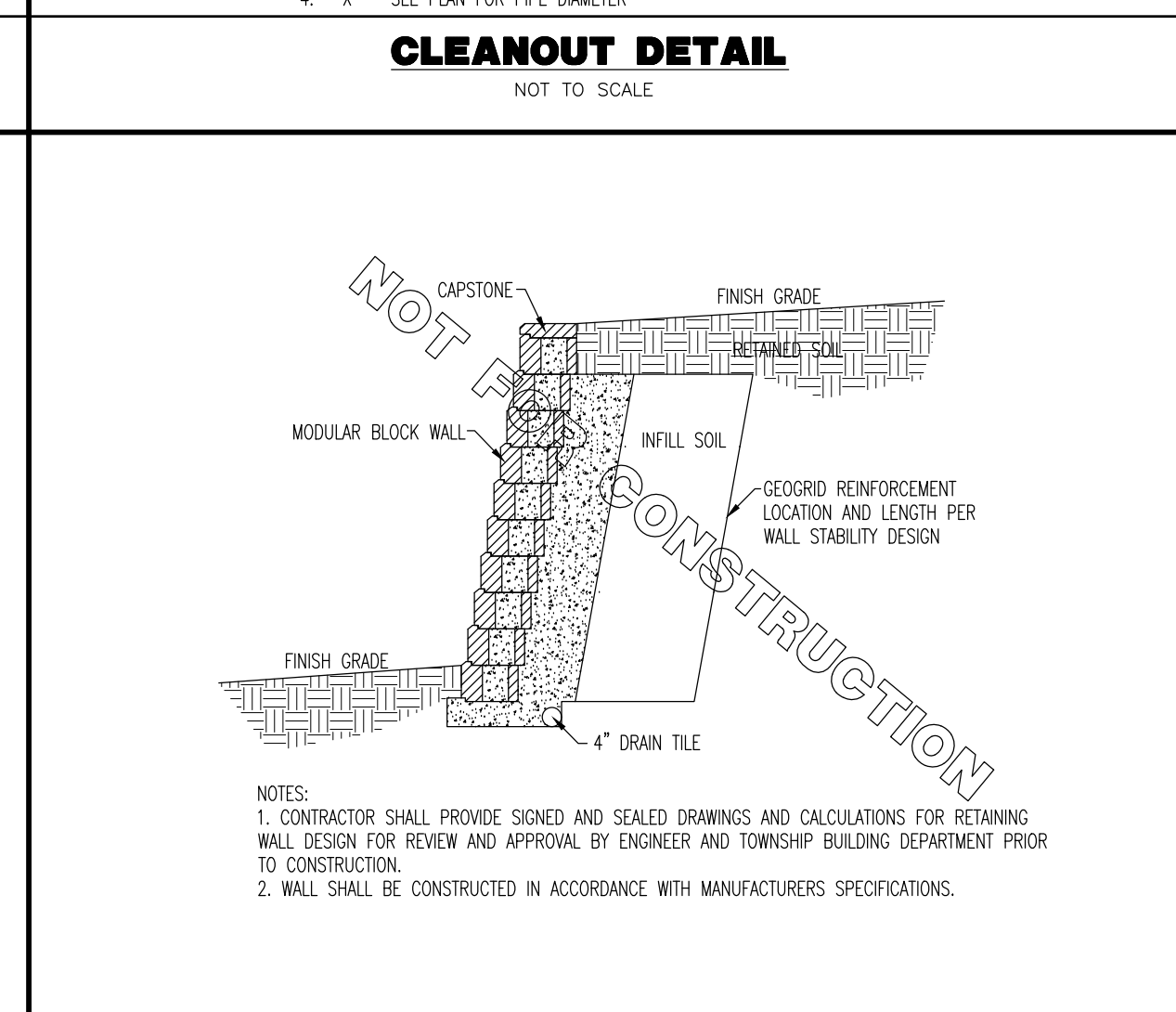
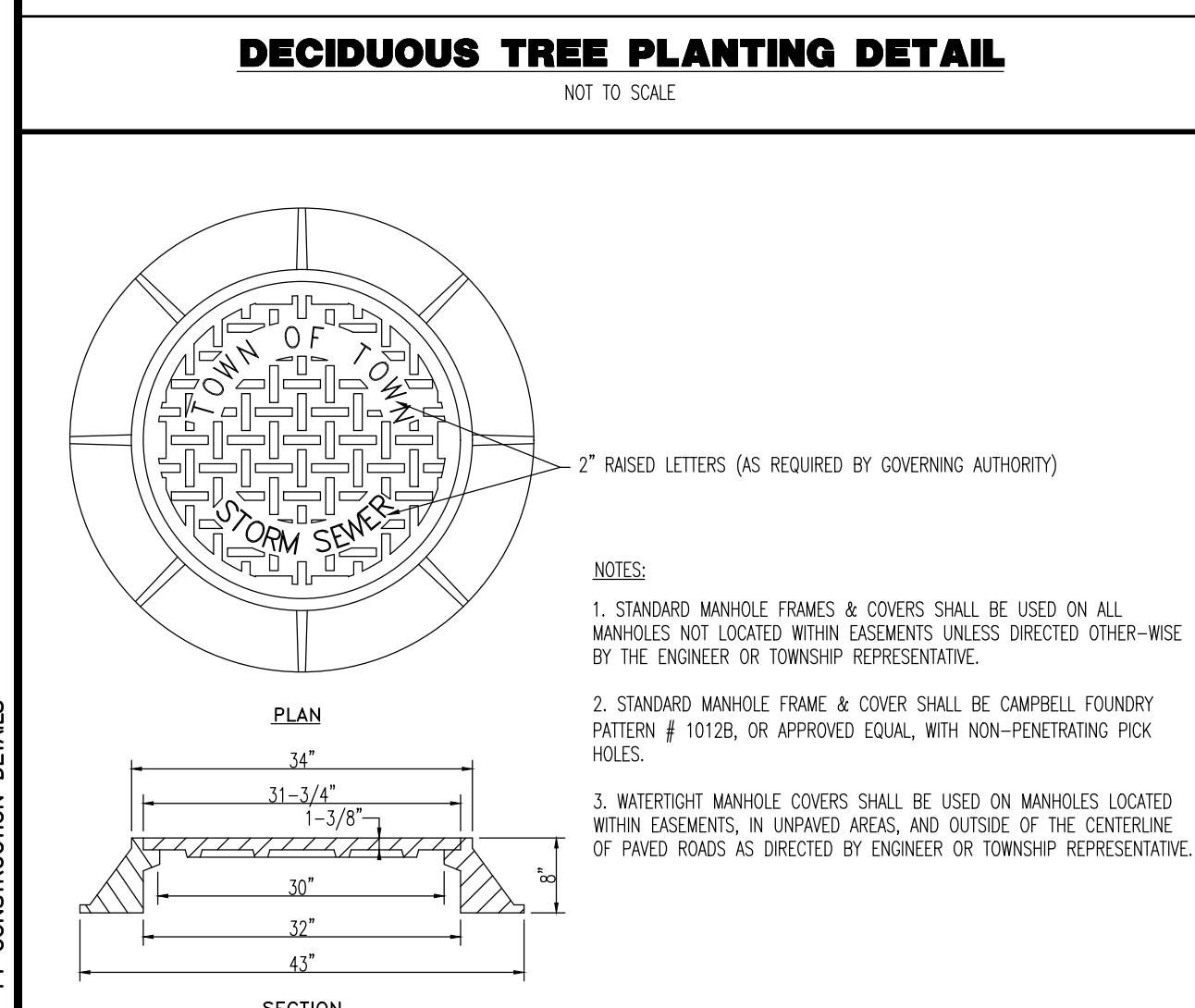
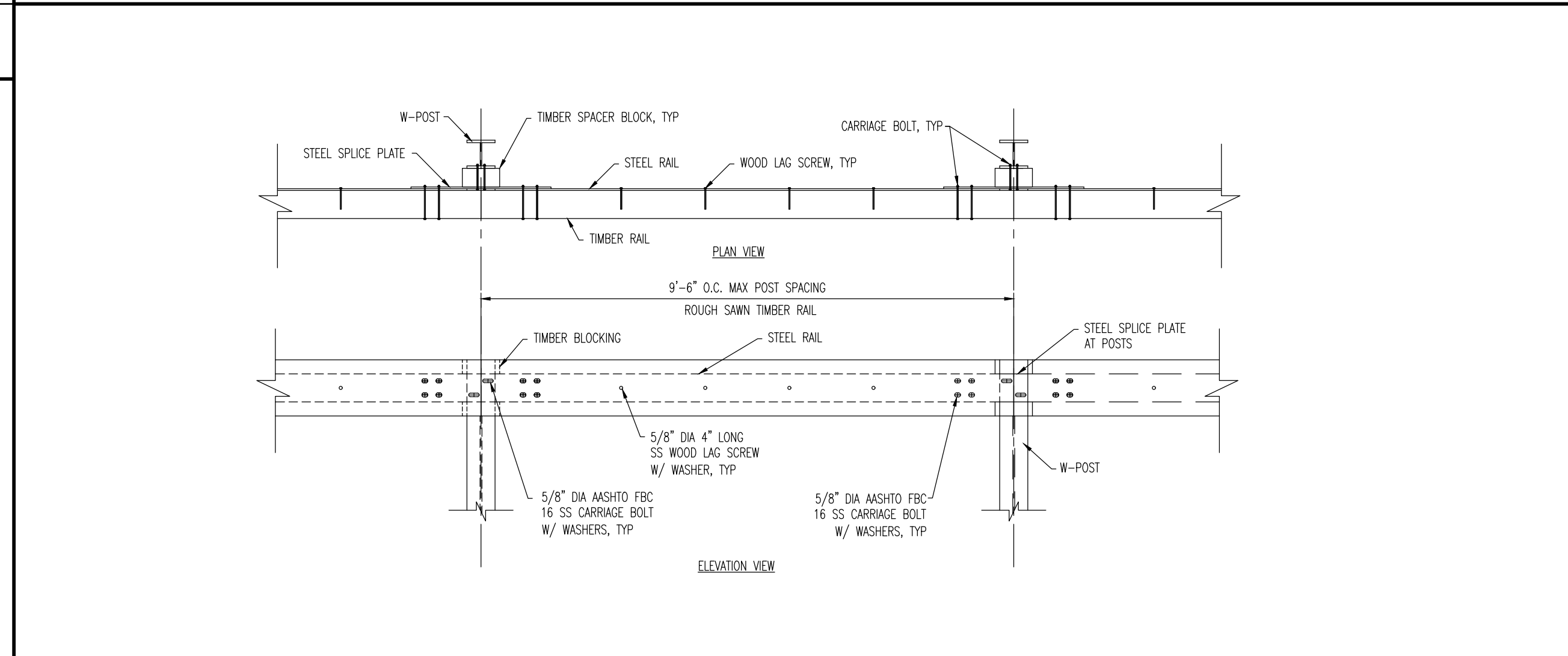
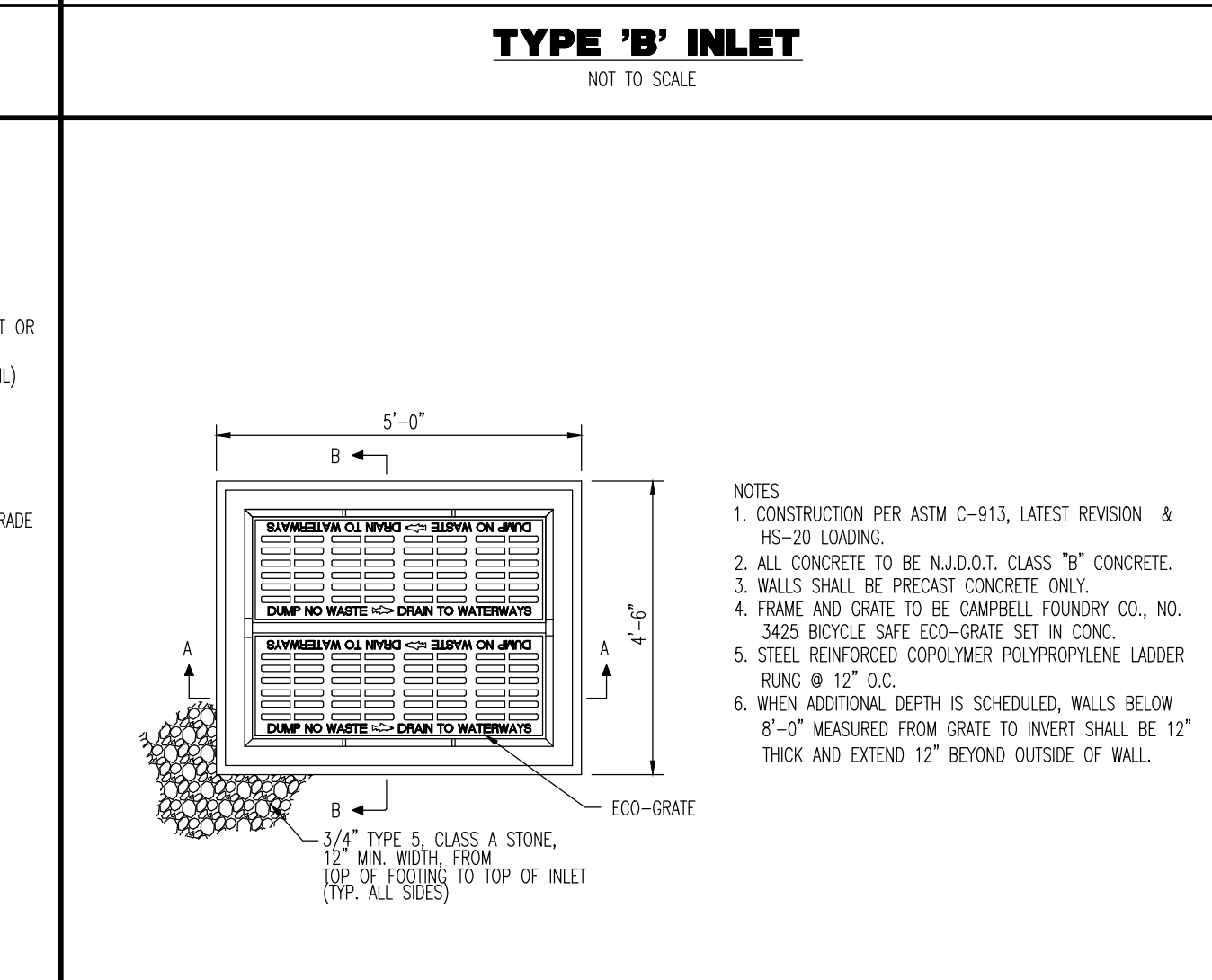
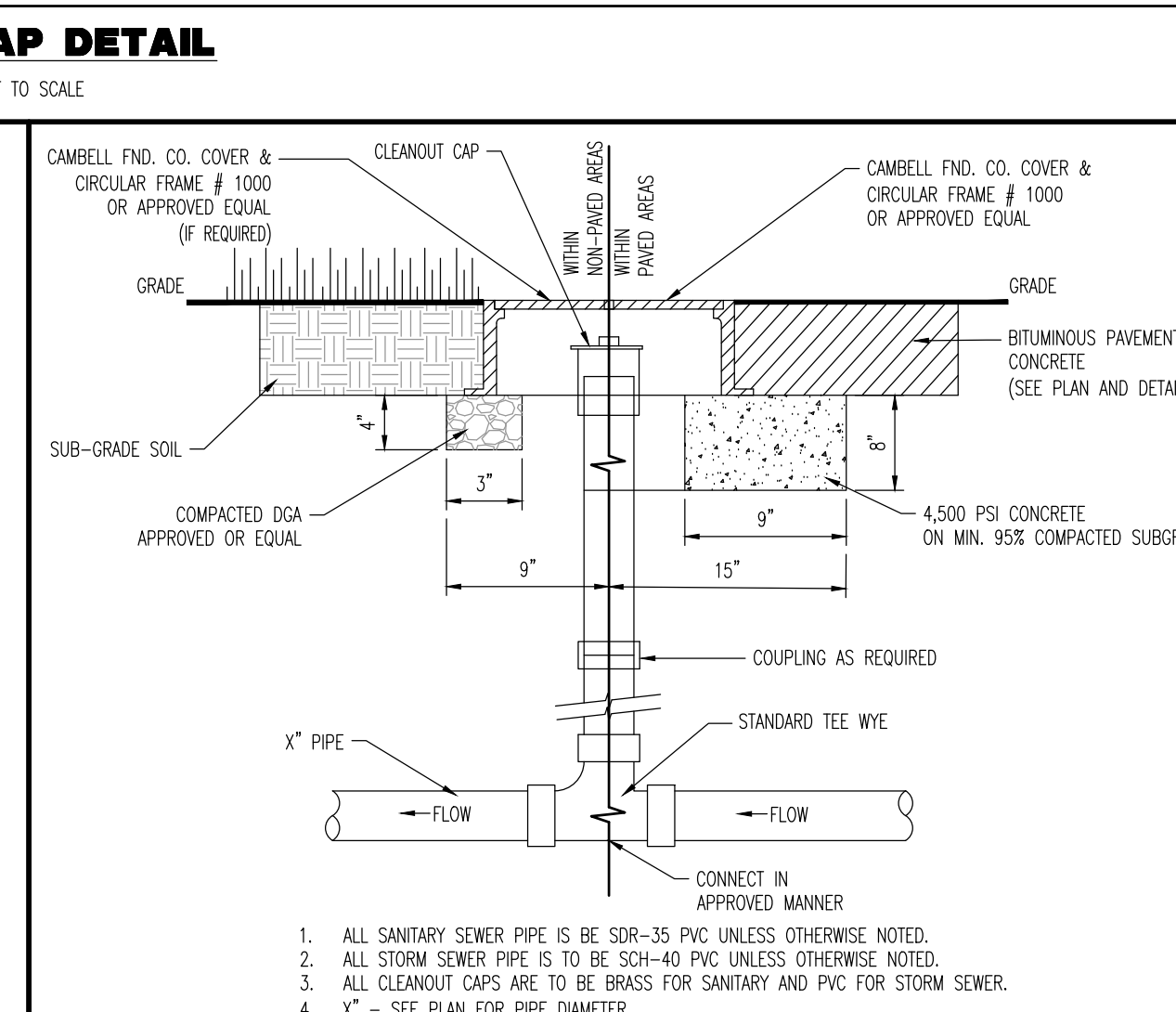
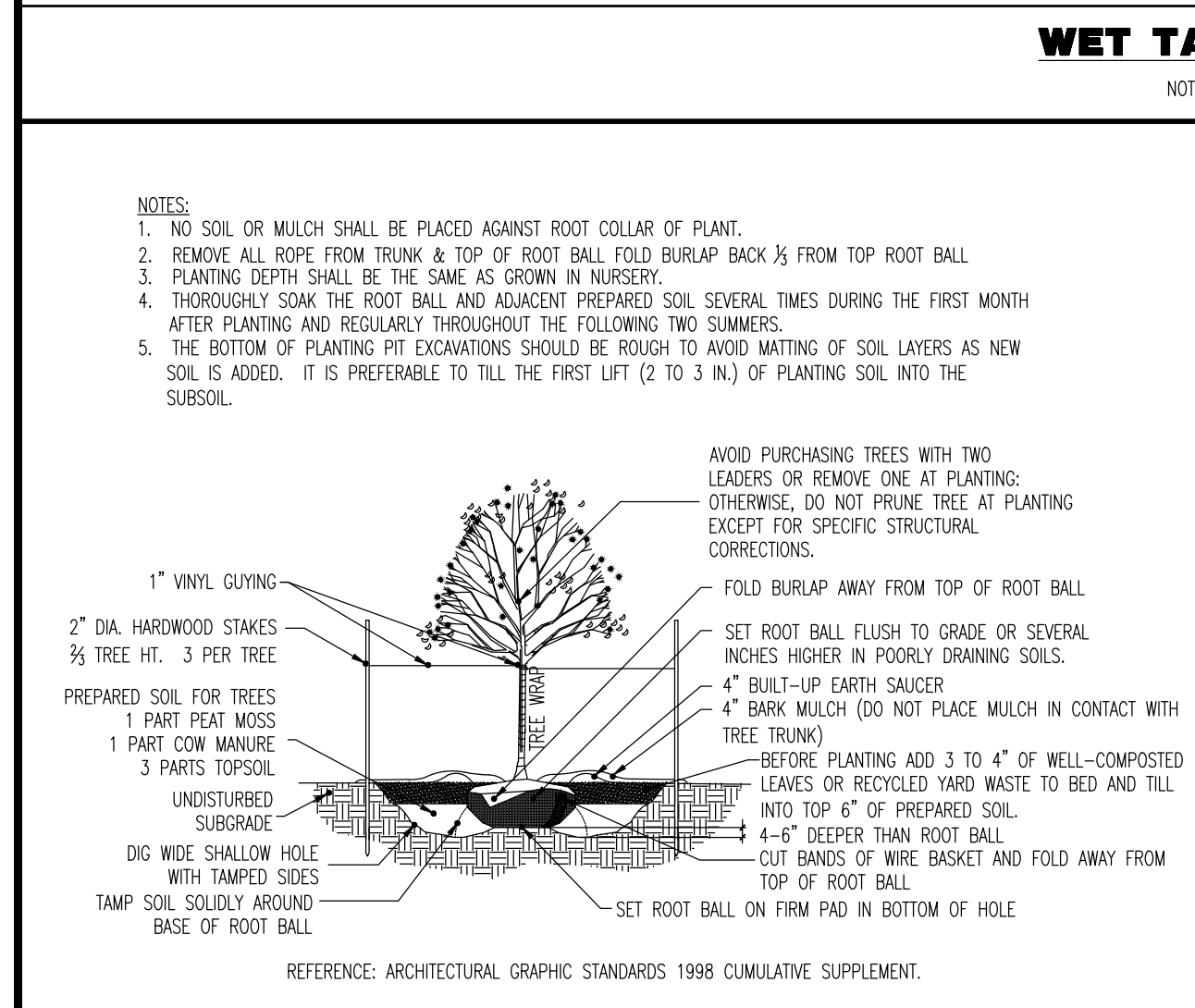
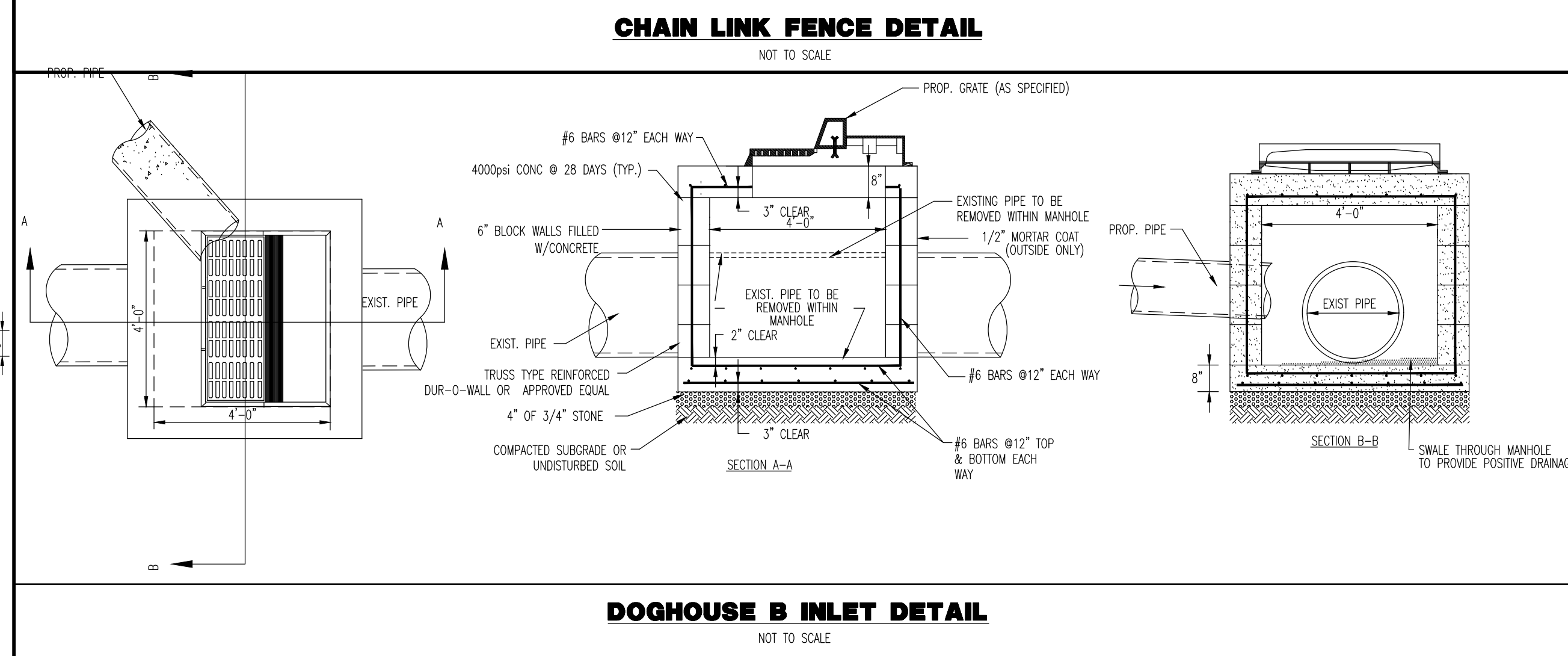
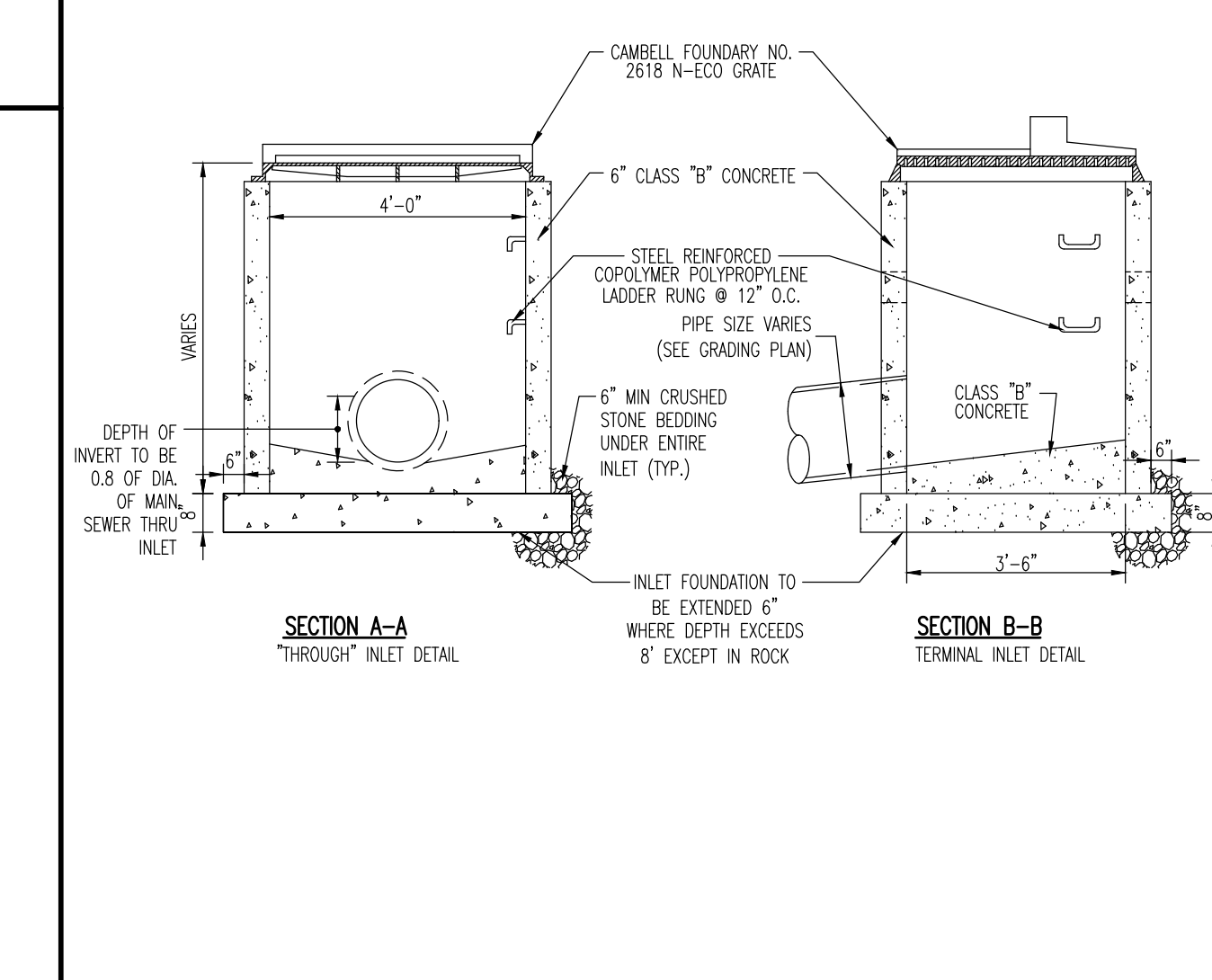
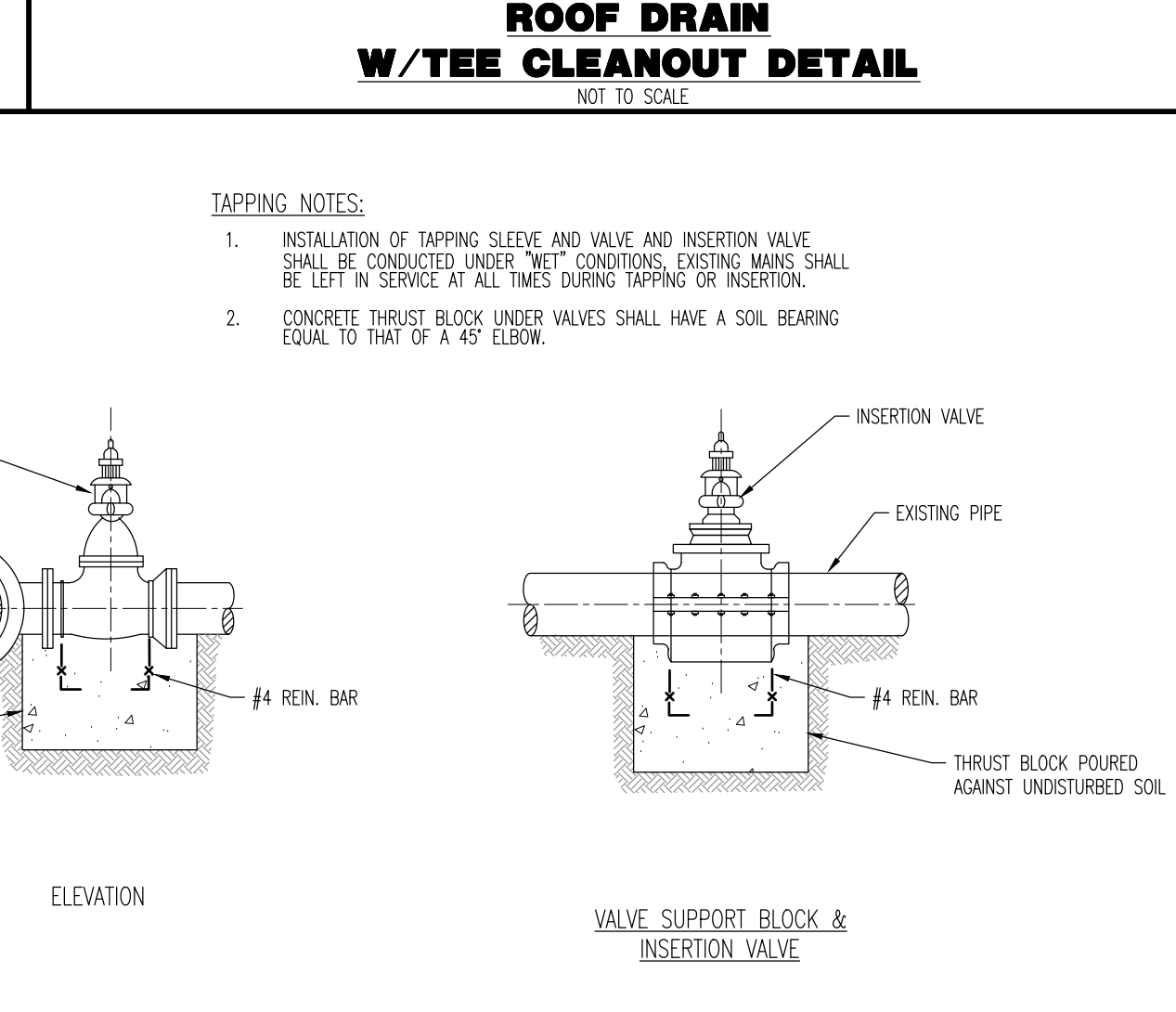
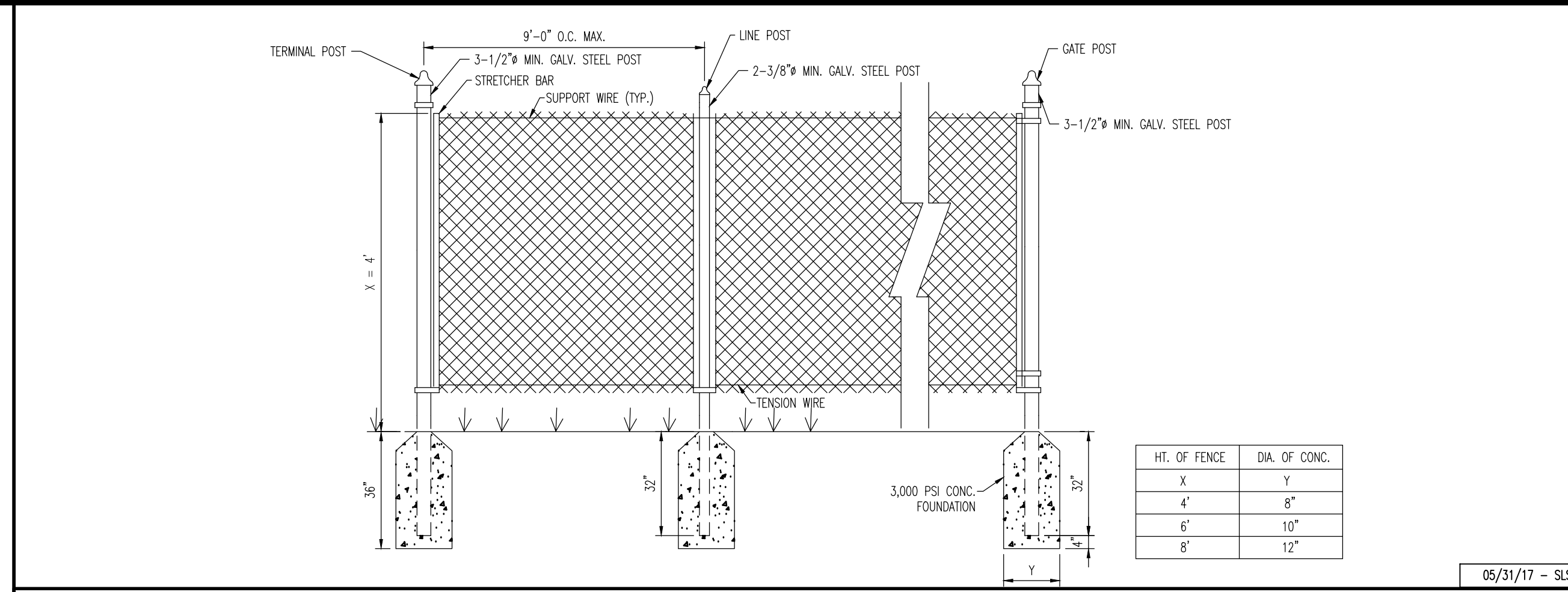
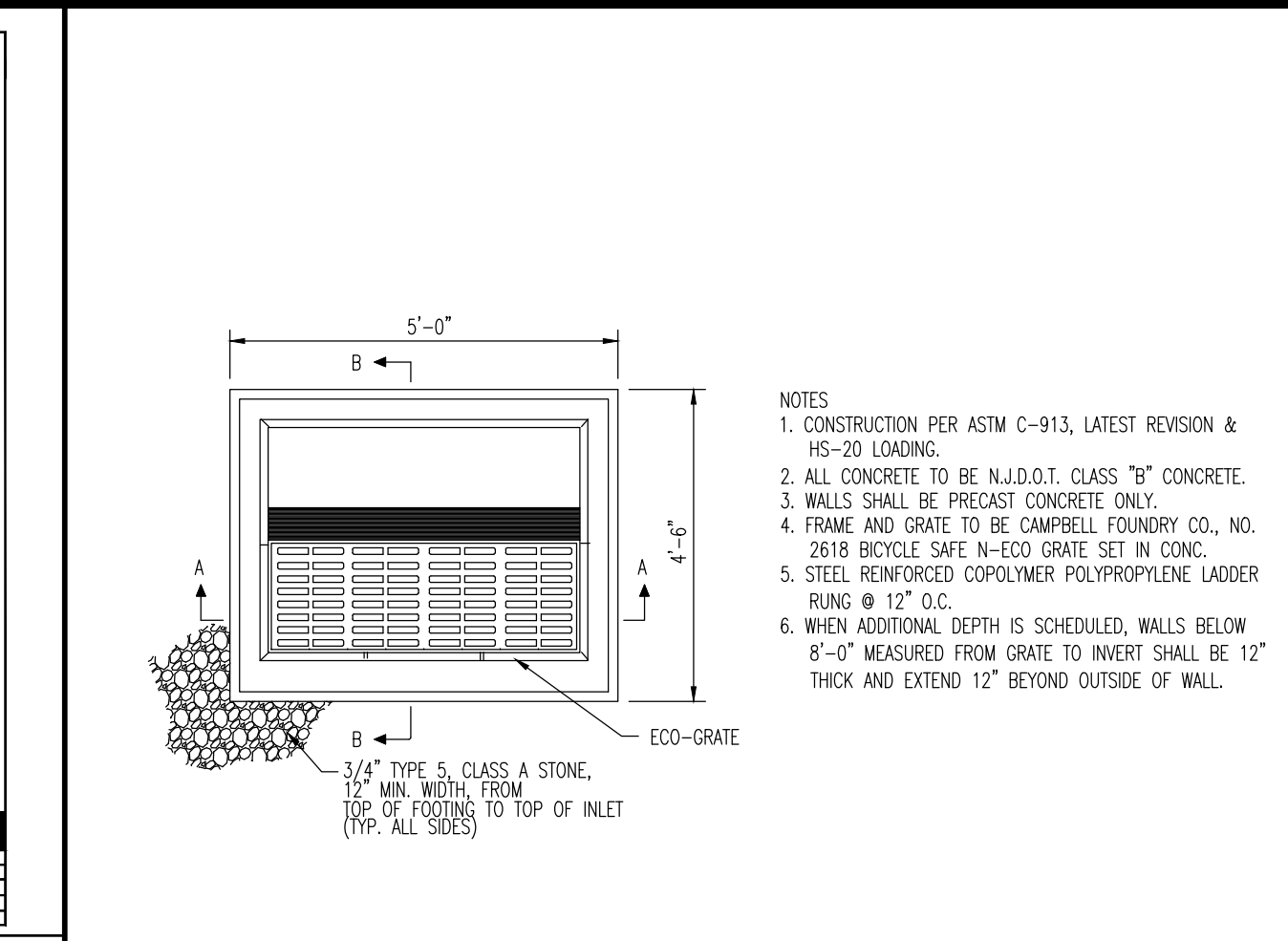
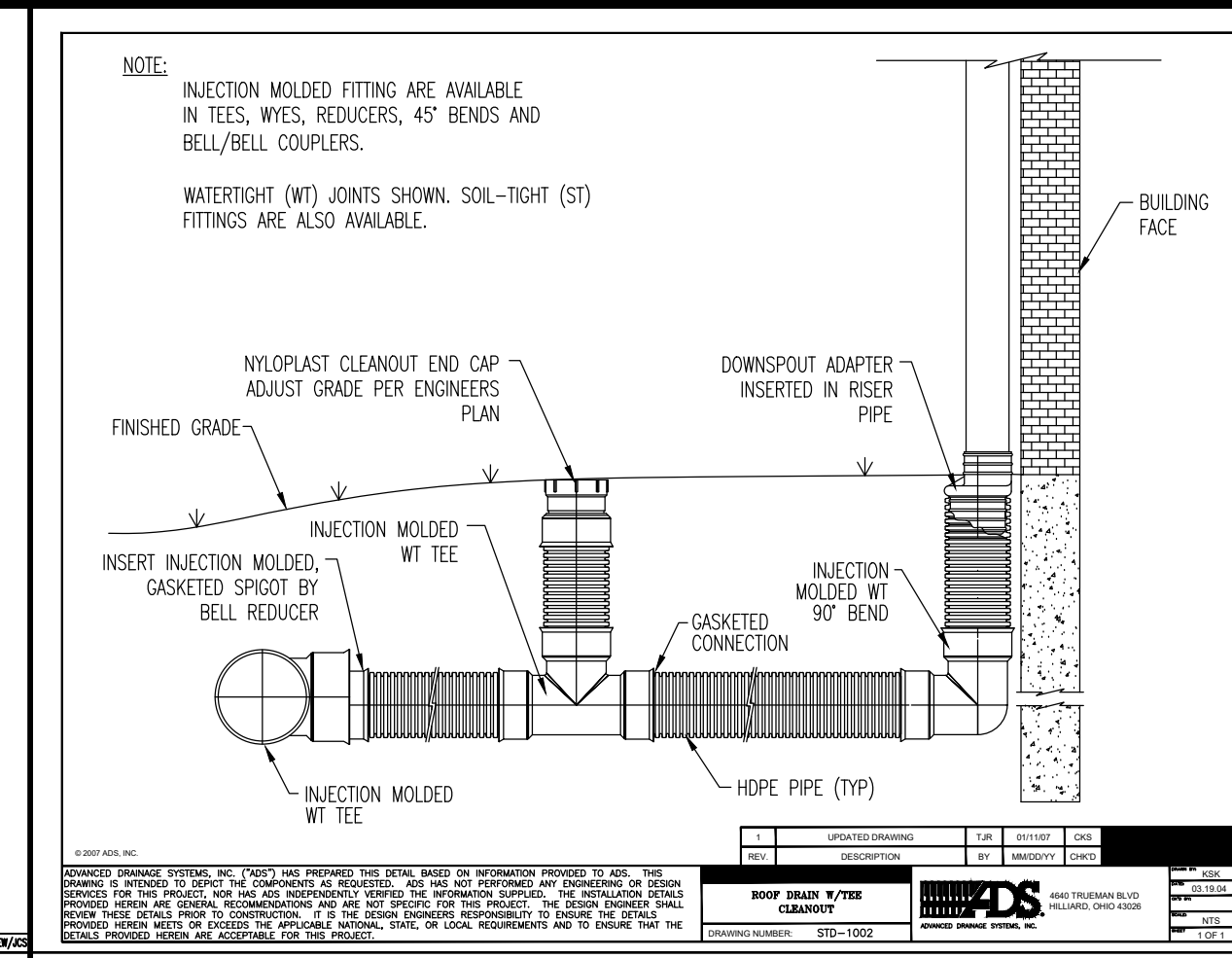
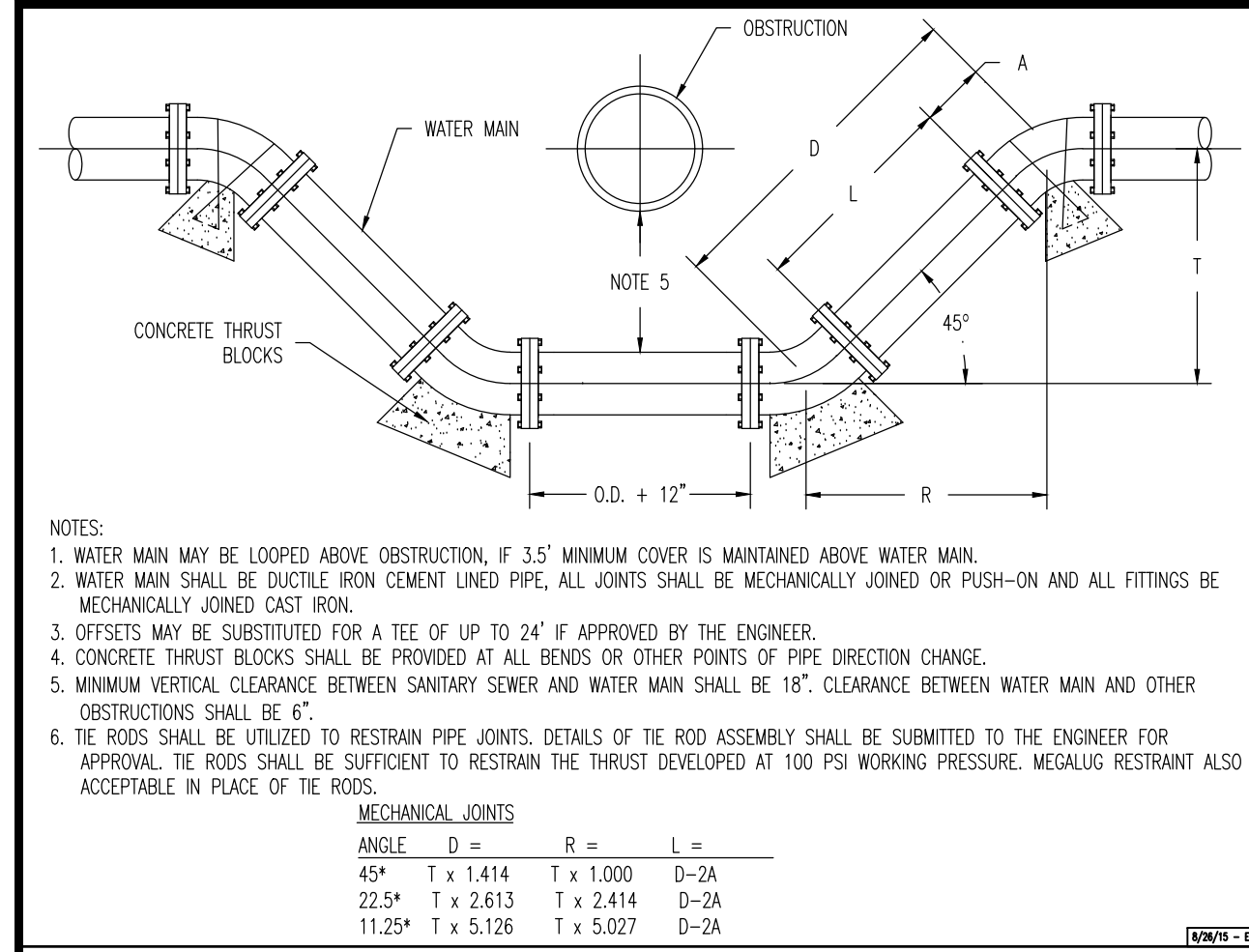
**CONSTRUCTION DETAILS**

PROJECT: HARBOR GROUP PROPOSED WAREHOUSE & SITE IMPROVEMENTS  
 BLOCK 528.04, LOTS 19.31 & 19.32  
 1100-150 BELMONT DRIVE  
 TOWNSHIP OF FRANKLIN, SOMERSET COUNTY, NEW JERSEY

JOB NO: 4035-99-001 DATE: 10/07/2021  
 DRAWN BY: MFZ SCALE: (H) NOT TO SCALE (V) SCALE  
 DESIGNED BY: DT SHEET NO:  
 CHECKED BY: KCK  
 CHECKED BY: 13

PROTECT YOURSELF  
 ALL STATE ENGINEERS MUST BE LICENSED AND REGISTERED WITH THE STATE OF NEW JERSEY  
 FOR THE STATE OF NEW JERSEY, VISIT WWW.CALEBTITLE.COM

Rev. 1



Project: 01/20/22 - 10:15 AM, By: kene, Product: 24.18 (LMS Tech)  
 File: 13.53.02 - PRODUCTS/13.53.02 - Harbor Group/13.53.02 - 14 CONSTRUCTION DETAILS

**IN CASE OF DISCREPANCY, TOWNSHIP STANDARD DETAILS SHALL HOLD**

THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION.

**DYNAMIC ENGINEERING**

LAND DEVELOPMENT CONSULTING • PERMITTING • GEOTECHNICAL • ENVIRONMENTAL • SURVEY • PLANNING & ZONING

1804 Main Street, Lakewood, NJ 07044  
 Phone: 732.974.3200 | Fax: 732.974.3201  
 Email: info@dynamiceng.com | www.dynamiceng.com

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**TITLE:** CONSTRUCTION DETAILS

**PROJECT:** HARBOR GROUP PROPOSED WAREHOUSE & SITE IMPROVEMENTS  
 BLOCK 528.04, LOTS 19.31 & 19.32  
 110-130 BELMONT DRIVE  
 TOWNSHIP OF FRANKLIN, SOMERSET COUNTY, NEW JERSEY

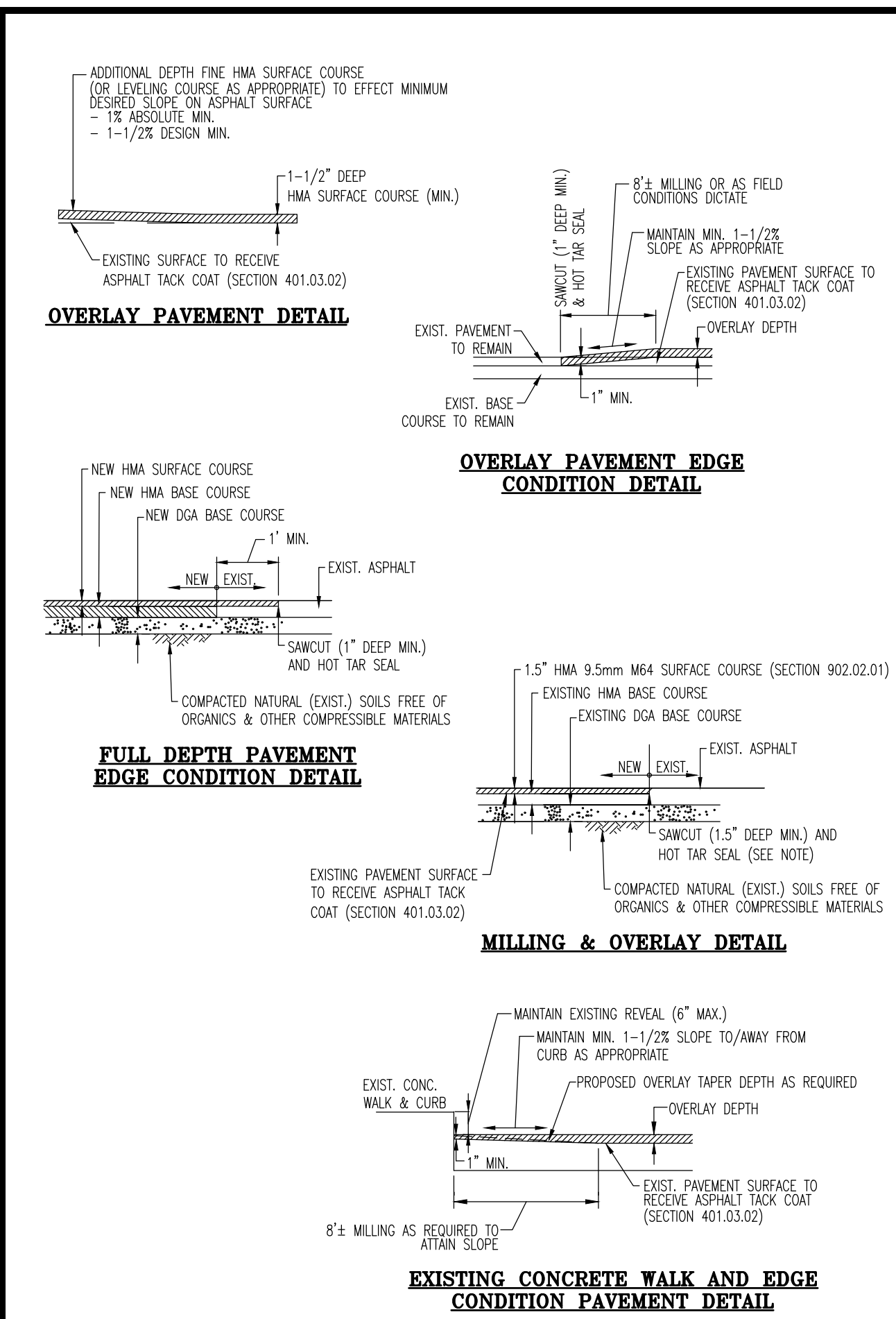
**DATE:** 10/07/2021  
**JOB No.:** 4035-99-001  
**SCALE:** (N) NOT TO SCALE (V) SCALE  
**DESIGNED BY:** MFZ  
**CHECKED BY:** KCK  
**DATE:** 10/07/2021  
**SHEET No.:** 14 OF 23

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**KYLE C. KAVINSKI** PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 52985  
**JOSHUA M. SEWALD** PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 52908

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**PROTECT YOURSELF!**  
 ALL WORK SHALL BE PERFORMED BY LICENSED PERSONNEL. VERIFY ALL WORK IS DONE ACCORDING TO THE PERMITS & APPROVE ALL WORK.  
 FOR MORE INFORMATION, CONTACT US AT: 732.974.3200



### KAD LED LED Area Luminaire

**Specifications**

- Length: 12.12" (307 mm)
- Width: 17.12" (435 mm)
- Height: 2.18" (56 mm)

**Ordering Information**

EXAMPLE: KAD LED 40C 1000 40K RS MVOLT SPD04 DBX8D

Series	LED	Beam Spread	CCT	Utilization	Voltage	Mounting
KAD10	20K	30/16L	530	530/NA*	3K	30K
	30K	30/16L	700	700/NA*	4K	40K
	40K	40/16L	1000	1000/NA*	5K	50K
	40K	40/16L	1000	1000/NA*	5K	3000K

**Shipping Information**

Series	LED	Beam Spread	CCT	Utilization	Voltage	Mounting
SPD04	20K	30/16L	530	530/NA*	3K	30K
SPD04	30K	30/16L	700	700/NA*	4K	40K
SPD04	40K	40/16L	1000	1000/NA*	5K	50K
SPD04	40K	40/16L	1000	1000/NA*	5K	3000K

### Ordering Information

**Accessories**

- ACU... Capable Luminaire
- ACU... Capable Luminaire

**Drilling**

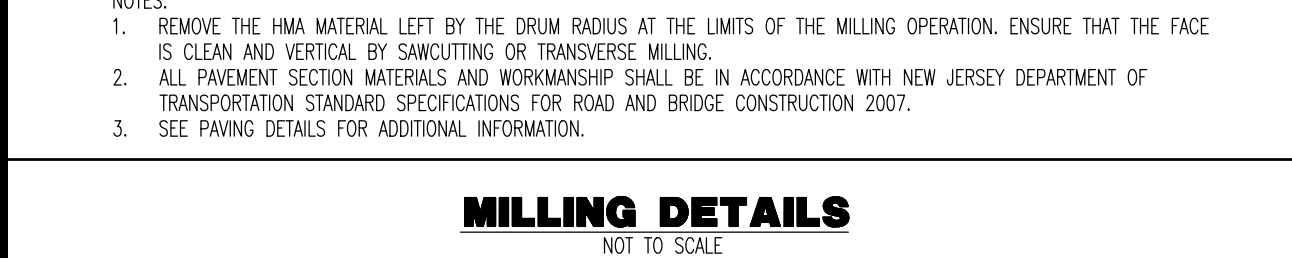
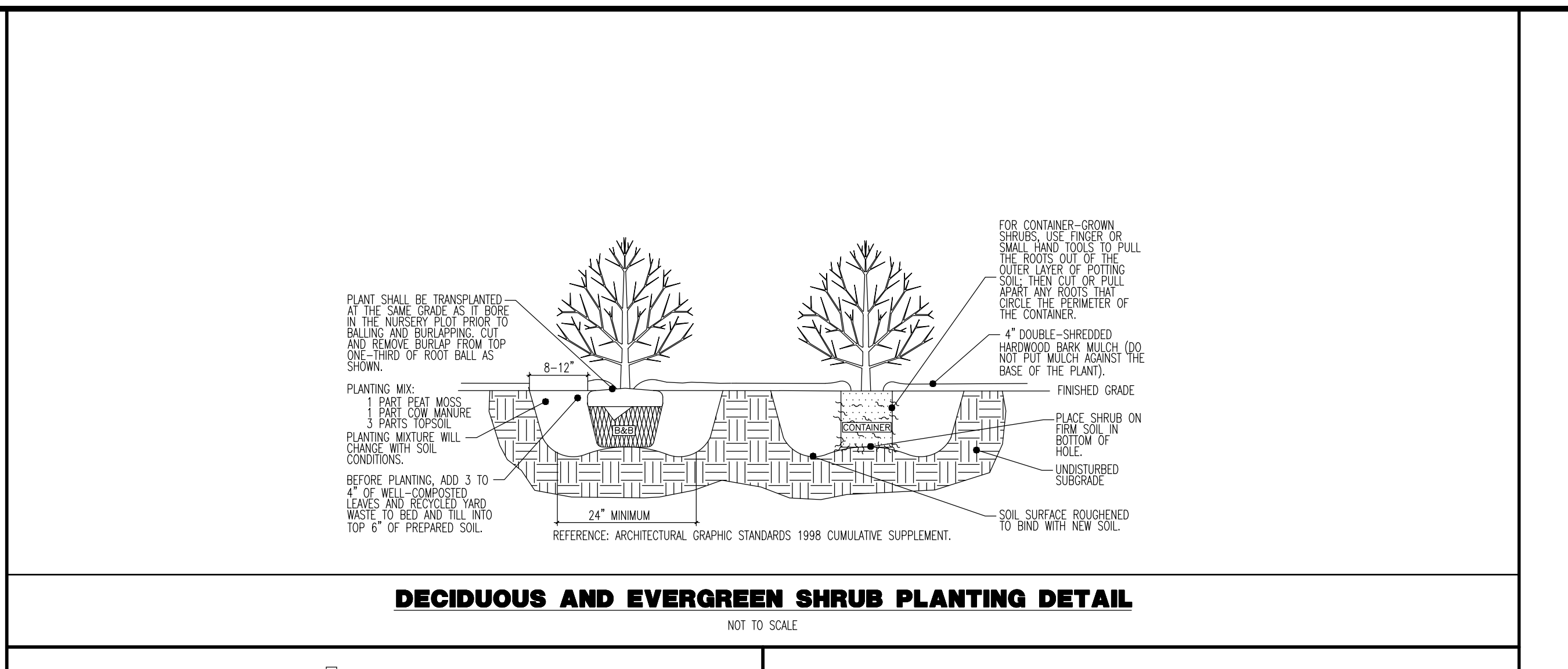
Template #5

**Handhole Orientation**

Top of Pole

**Tanon Mounting Slipfitter\*\***

Size	Part No.	Part No.	Part No.	Part No.	Part No.
2.31"	T20-190	T20-200	T20-200	T20-300	T20-300
2.18"	T20-190	T20-200	T20-200	T20-300	T20-300
2.18"	T20-190	T20-200	T20-200	T20-300	T20-300



**AREA LIGHTING DETAIL**

NOT TO SCALE

**ABB ARBOR BOLLARD**

**POWER AND LUMENS**

Lumen Distribution	B1 Symmetric	B2 Symmetric	B1 Asymmetric	B2 Asymmetric
Power Rating (Watt)	55W	55W	110W	220W
Input Current (mA) @ 120V	460	460	920	1840
Input Current (mA) @ 208V	80	160	80	160
Input Current (mA) @ 240V	70	140	80	160
Input Current (mA) @ 277V	60	120	40	80

**LUMEN MAINTENANCE**

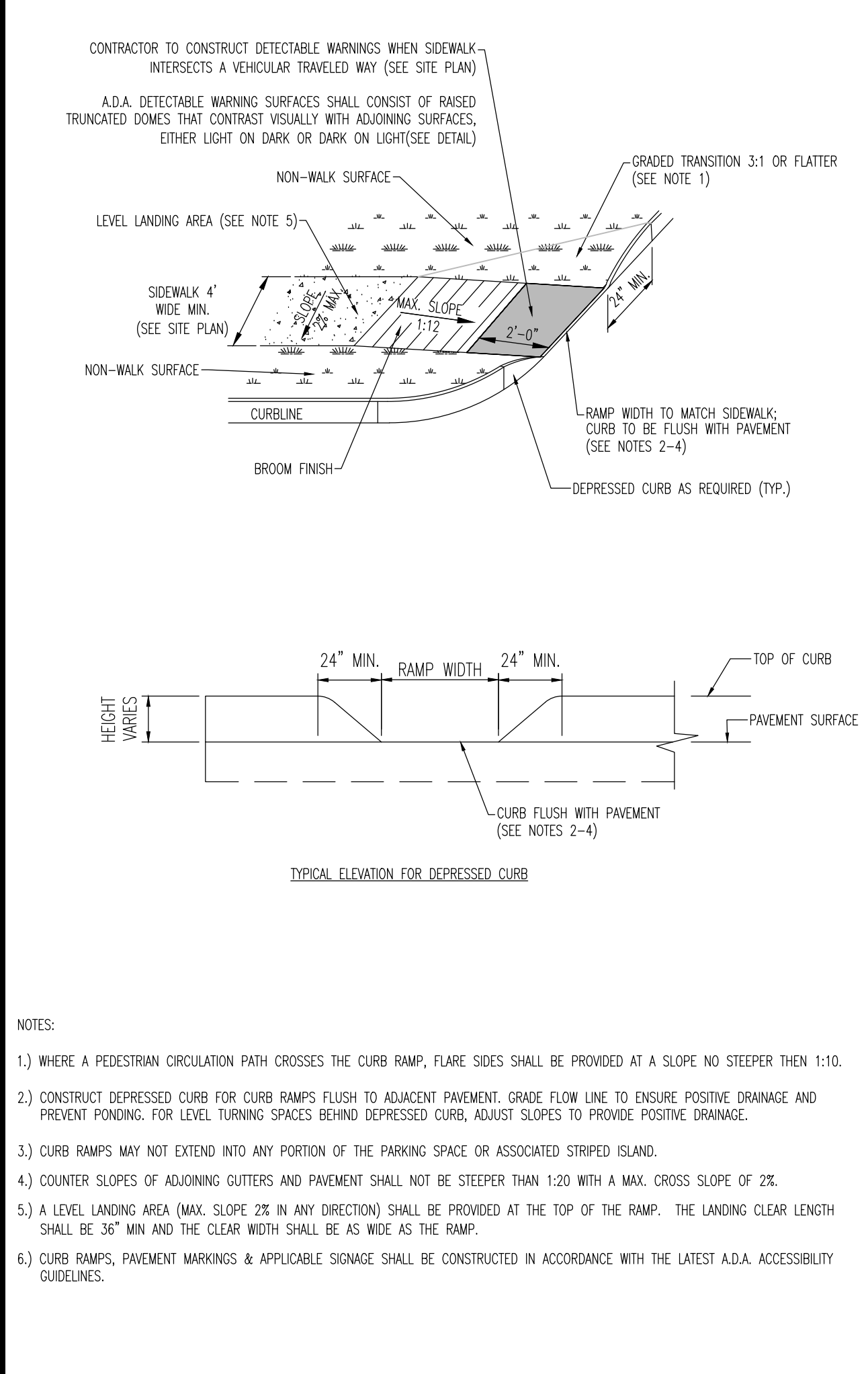
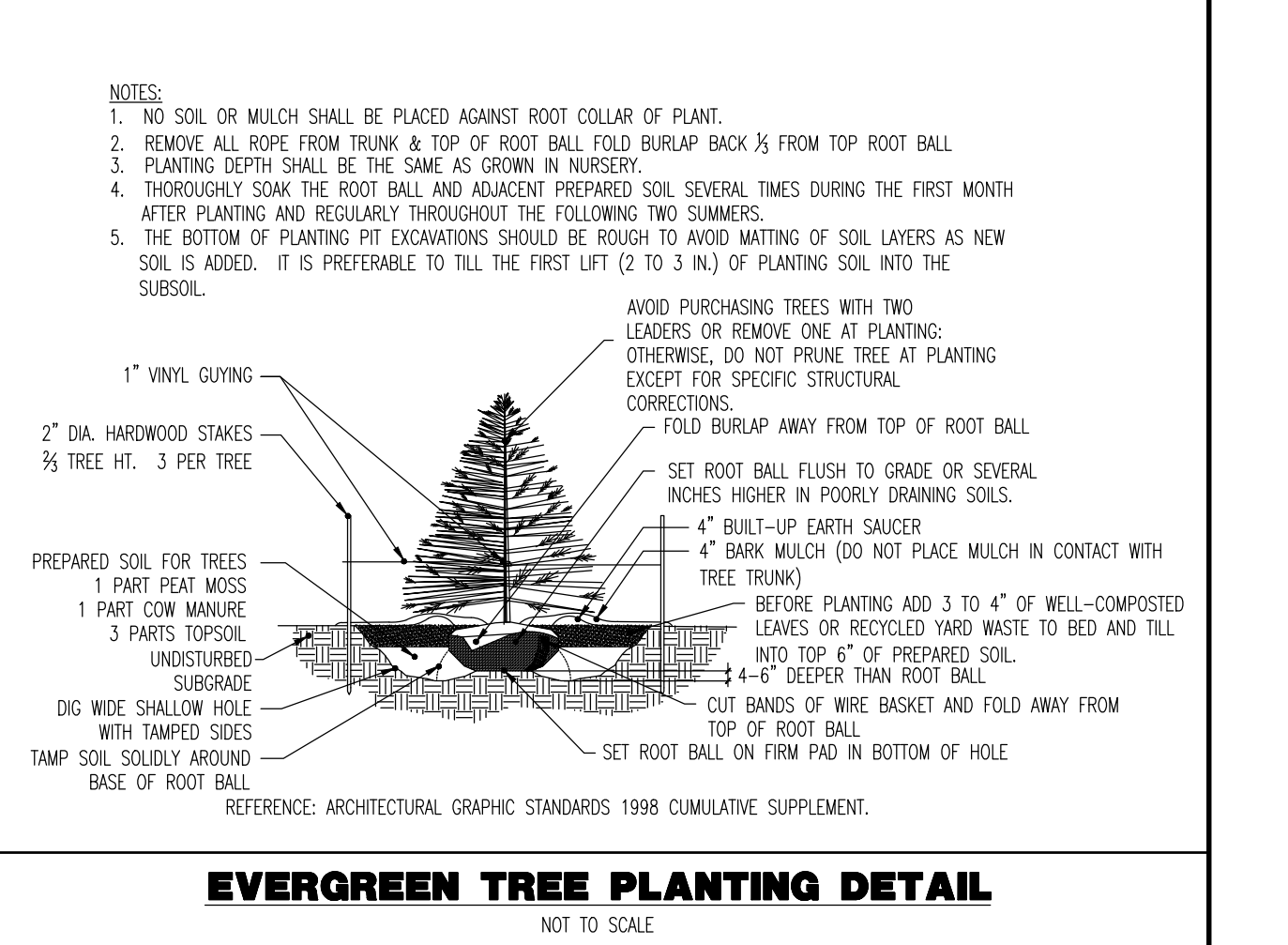
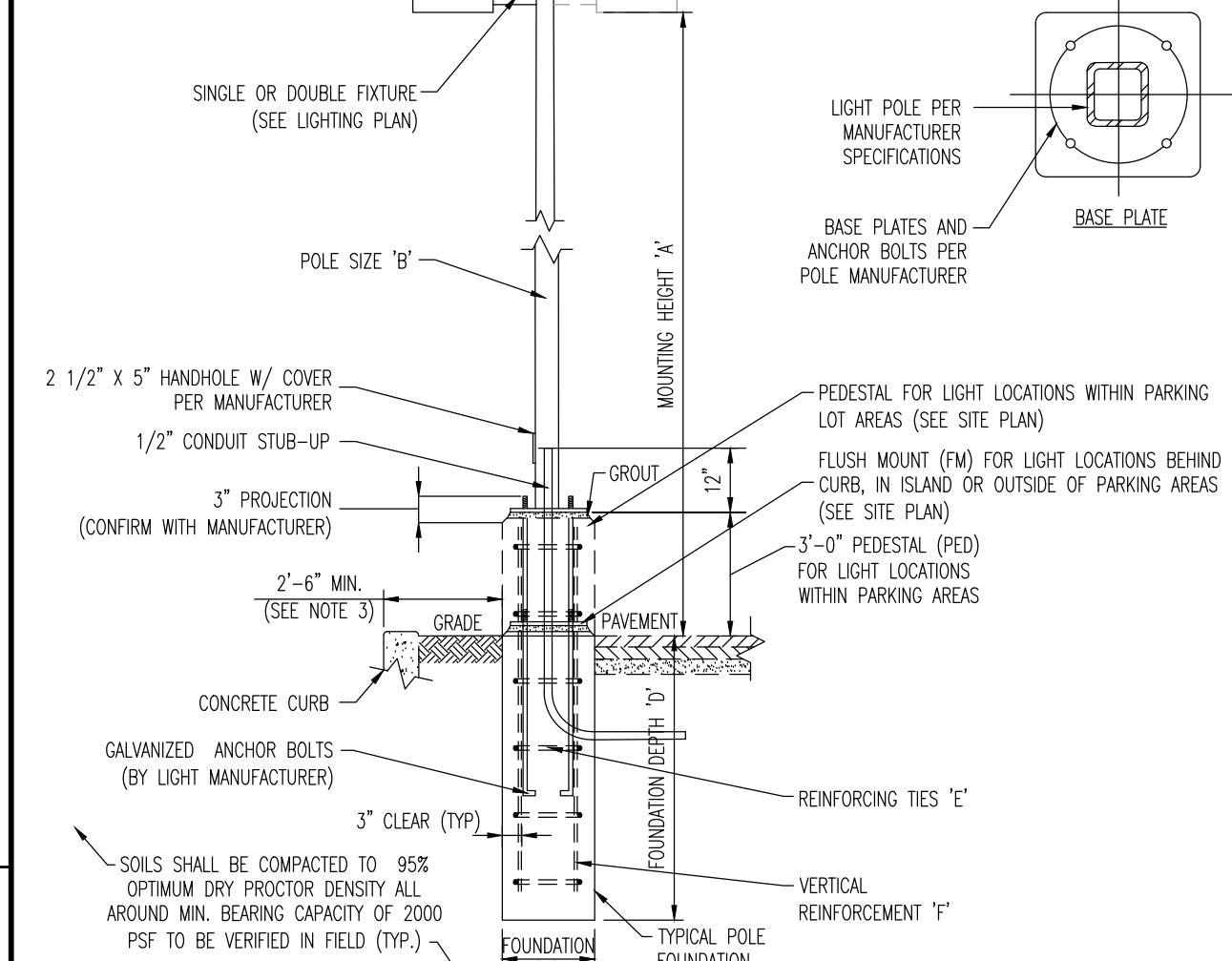
Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Calculated L70 (Hours)
25°C	>95%	>350,000
40°C	>93%	>300,000
50°C	>90%	>170,000

**ABB ARBOR BOLLARD LUMEN MULTIPLIER**

Ambient Temperature	Lumen Multiplier
0°C	1.02
5°C	1.01
20°C	1.00
30°C	0.97

**ORDERING INFORMATION**

Product Family	Lumen Output*	Source	Nominal Height	Voltage	Distribution	Color
ABB-Arbor Bollard	B1-Mid Lumen Output B2-High Lumen Output	LED	26.37" 36.37" 46.37"	01-Dimming Driver (120-277V) * 240-247V * 480-480V **	A-Symmetric B-Symmetric	A1-Gray B1-Brass B2-Black B3-Blue B4-White B5-Black B6-White B7-Black B8-White B9-Black B10-White B11-Black B12-White B13-Black B14-White B15-Black B16-White B17-Black B18-White B19-Black B20-White B21-Black B22-White B23-Black B24-White B25-Black B26-White B27-Black B28-White B29-Black B30-White B31-Black B32-White B33-Black B34-White B35-Black B36-White B37-Black B38-White B39-Black B40-White B41-Black B42-White B43-Black B44-White B45-Black B46-White B47-Black B48-White B49-Black B50-White B51-Black B52-White B53-Black B54-White B55-Black B56-White B57-Black B58-White B59-Black B60-White B61-Black B62-White B63-Black B64-White B65-Black B66-White B67-Black B68-White B69-Black B70-White B71-Black B72-White B73-Black B74-White B75-Black B76-White B77-Black B78-White B79-Black B80-White B81-Black B82-White B83-Black B84-White B85-Black B86-White B87-Black B88-White B89-Black B90-White B91-Black B92-White B93-Black B94-White B95-Black B96-White B97-Black B98-White B99-Black B100-White



**Invue**

**DESCRIPTION**

The Arbor Bollard from Invue brings architectural style to the pedestrian level. The Arbor Bollard can be used along with Arbor post top luminaires to provide a coordinated look to enhance any architectural setting. WaveStream™ LED options provide a pollution free image replacing visible glare, while providing high levels of pavement illumination.

**CONSTRUCTION**

Top housing: Low copper, cast aluminum top maintains strength and precision while providing for rapid heat dissipation, wind resistance and superior airflow. Lower housing: Heavy 6188\* well sealant extruded aluminum 4" O.D. shaft attached to base via stainless steel fasteners. BASE: Rugged corrosion resistant extruded aluminum base mounts to foundation with three anchor bolts. Base features a pliable 1/2" thick neoprene leveling pad fitted to the bottom of base allows for seating against water and dirt ingress regardless of minor deviations in grade of concrete pad.

**Optics**

General purpose symmetric distribution is available using WaveStream™ LED optical technology. The optical waveguide is manufactured using precision injection molded acrylic for the ultimate level of glare control and visual comfort. Offered standard in 4000K (+278K) CCT, optional 3000K minimum 90 CRI.

**ABB ARBOR BOLLARD PATHWAY LUMINAIRE**

**CERTIFICATION DATA**

UL-Listed  
IP66  
LM78  
LM80  
LM81

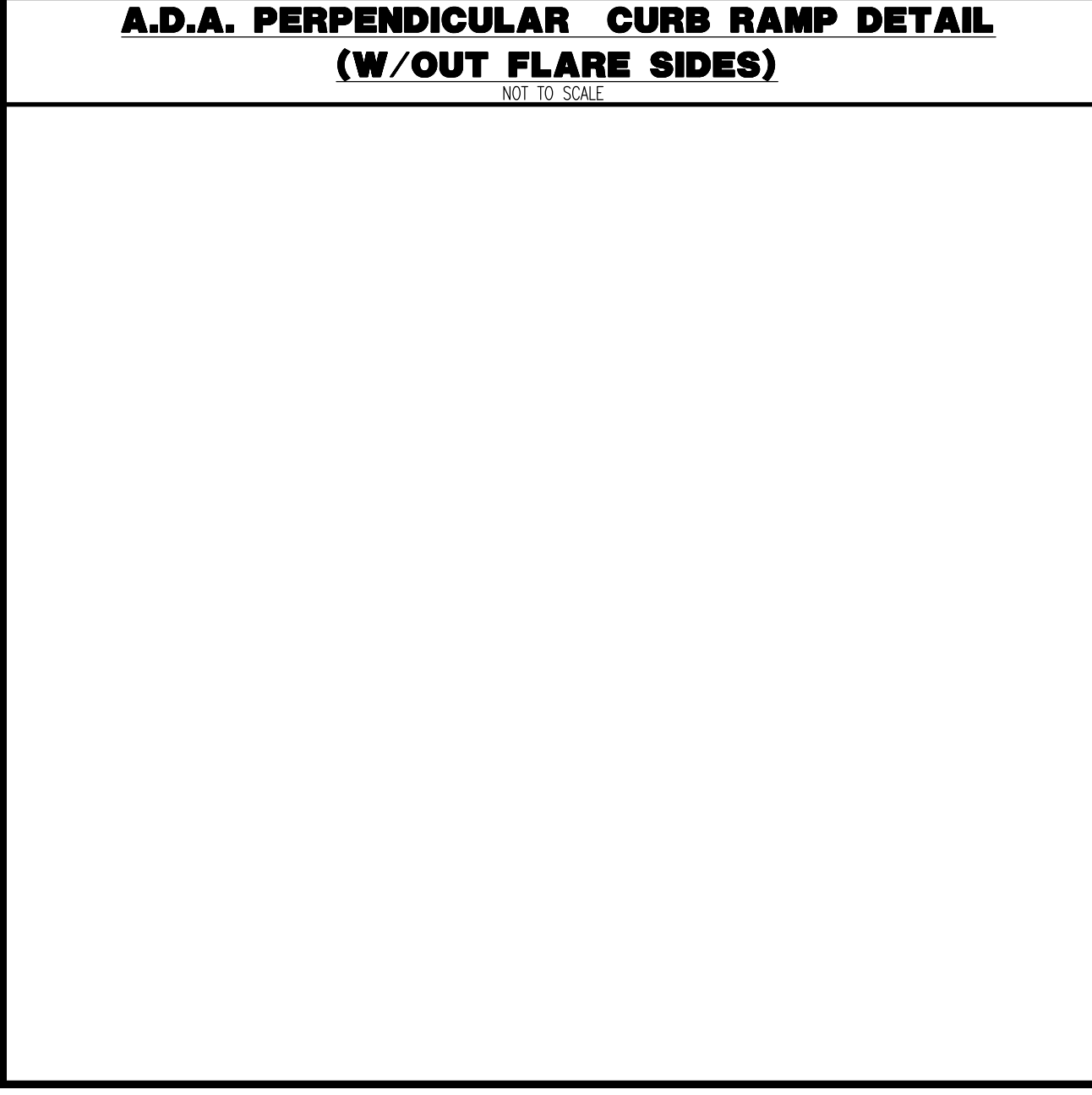
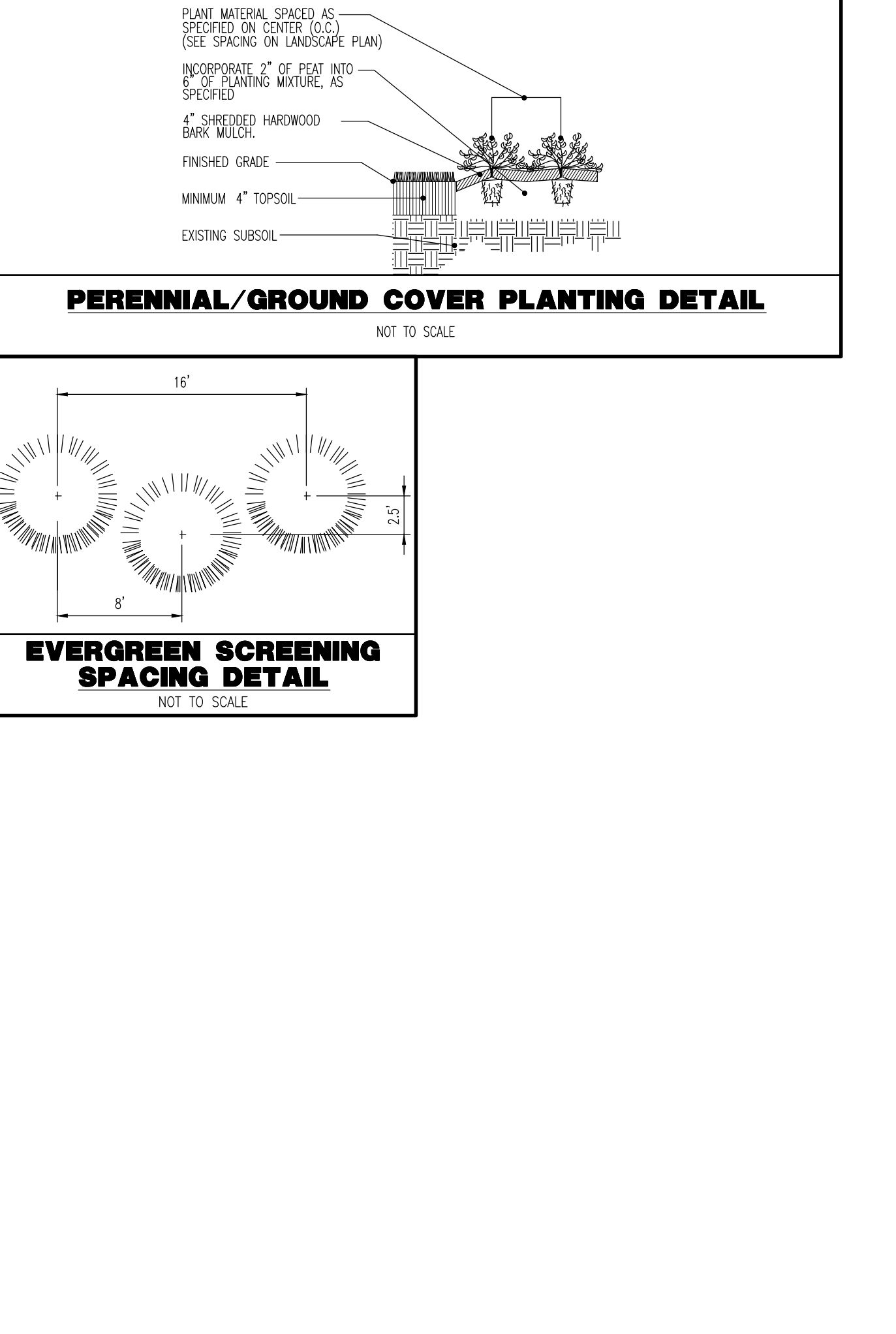
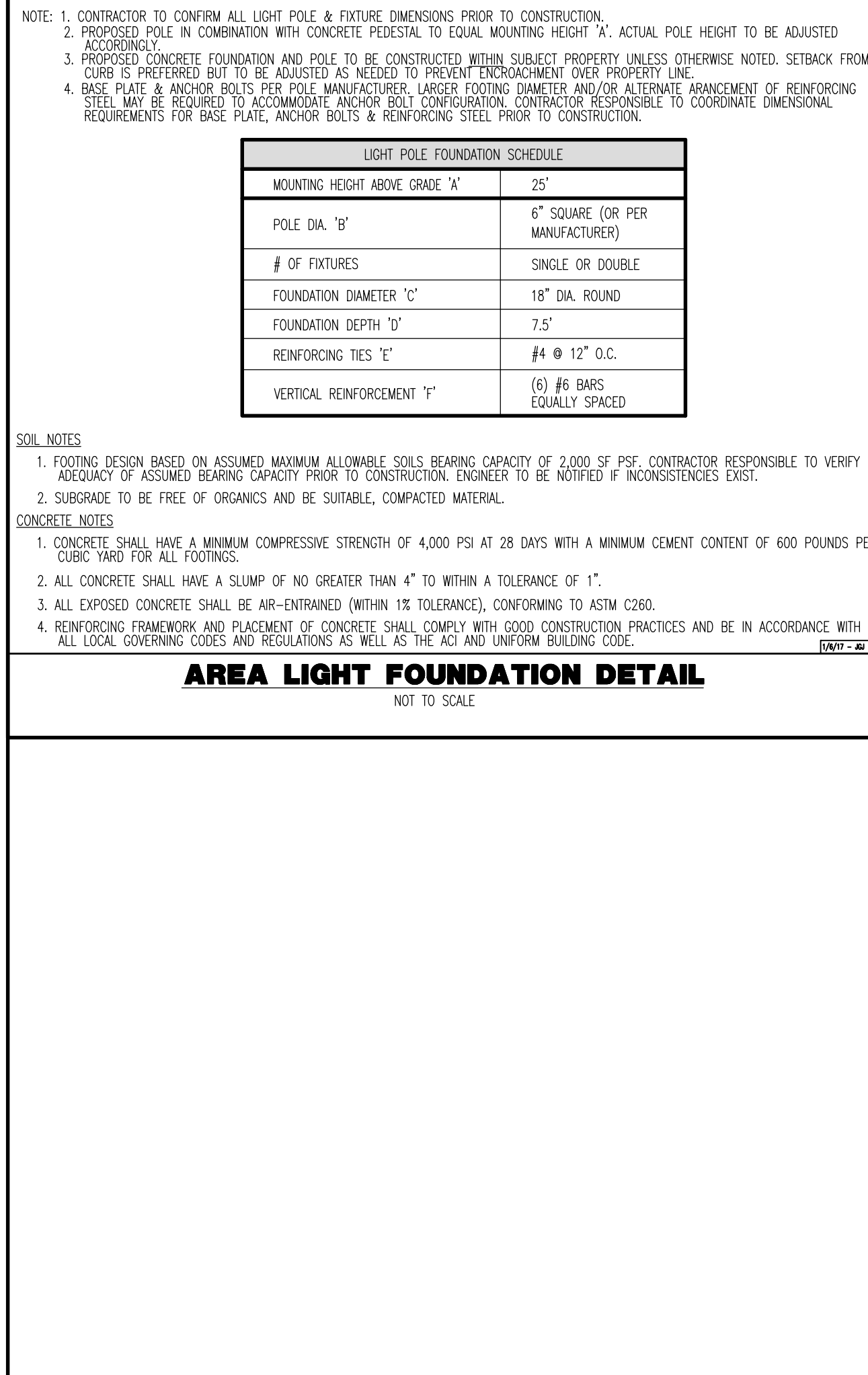
**ENERGY DATA**

Elemental LED Driver  
LED Power Factor  
-20% Total Harmonic Distortion  
120-277VAC Input  
34V 60W, 48V 60W  
30°C Minimum Temperature  
40°C Ambient Temperature Rating

Approximate Net Weight: 19.25 lbs (8.75 kg)

**BOLLARD LIGHTING DETAIL**

NOT TO SCALE



**COOPER LIGHTING SOLUTIONS**

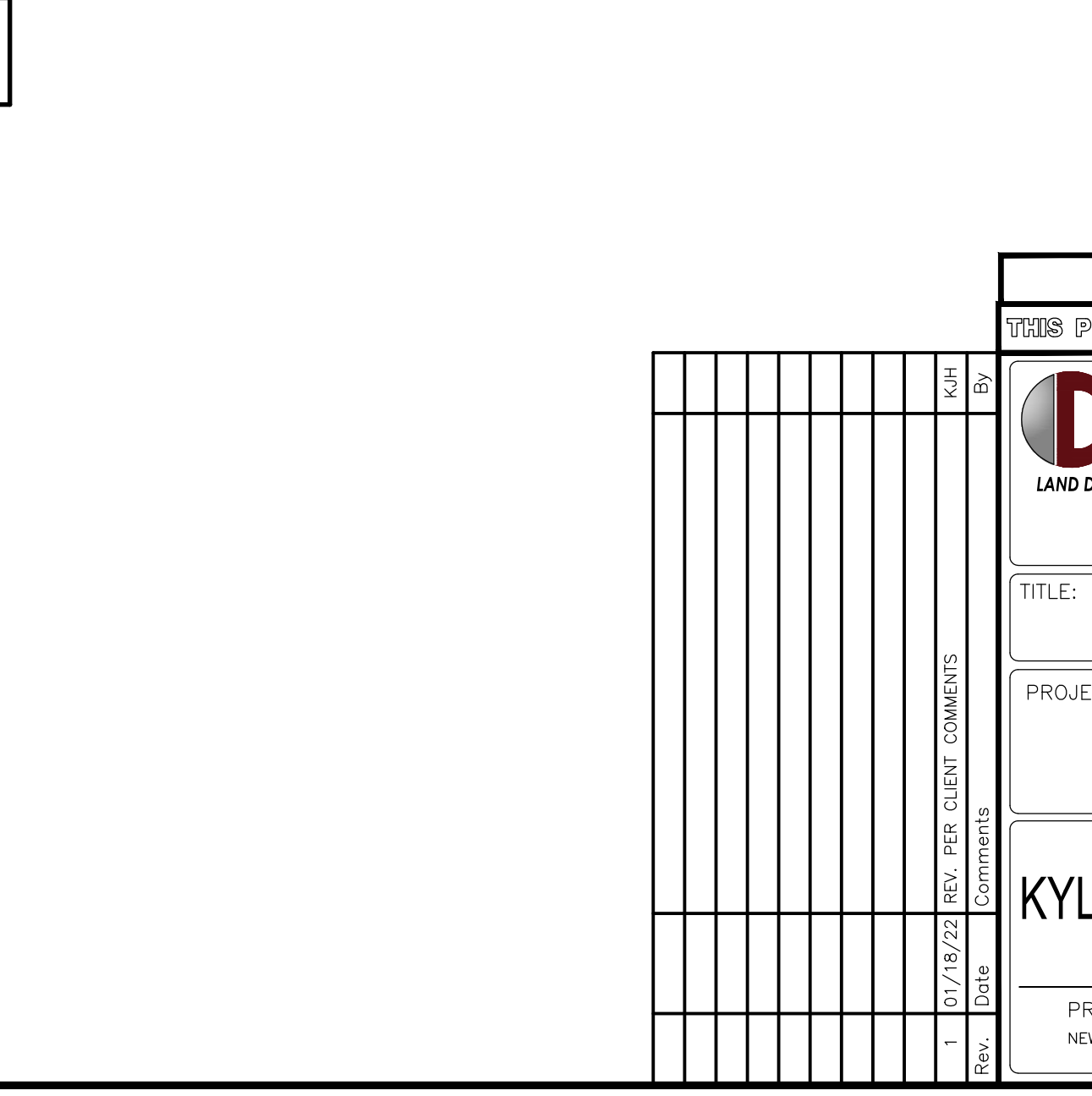
**BOLLARD LIGHTING DETAIL**

NOT TO SCALE

**COOPER LIGHTING SOLUTIONS**

**BOLLARD LIGHTING DETAIL**

NOT TO SCALE



**DYNAMIC ENGINEERING**

**CONSTRUCTION DETAILS**

PROJECT: HARBOR GROUP PROPOSED WAREHOUSE & SITE IMPROVEMENTS

DESIGNED BY: DT

CHECKED BY: KCC

KYLE C. KAVINSKI

JOSHUA M. SEWALD

DATE: 10/07/2021

SHEET: 15 OF 23

**FRANKLIN TOWNSHIP ENGINEERING DEPARTMENT**

**STANDARD NOTES APPLICABLE TO ALL PROJECTS**  
**ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION FOR SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH THE FOLLOWING, AS APPLICABLE:**  
 A. New Jersey Department of Transportation "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".  
 B. Current prevailing Municipal and County Specifications, Standards and Requirements.  
 C. Current prevailing Utility Company/Authority Specifications, Standards and Requirements.  
 D. State of New Jersey R.A.C.A. Code and Barrier-Free Design Regulations as Currently Amended.  
 E. Current ANSI/AWS Standards, Specifications and Requirements for the Water Supply System material.  
 F. Water line testing to be performed as Utility Company standard of 200 p.s.i. for two hours without any leakage or pressure drop.

All-bid plans of the entire site prepared by a New Jersey Licensed Land Surveyor, in accordance with Township requirements, are to be provided to the Township prior to the release of the performance bond.

No soil may be imported to or removed from the site until a soil importation or exportation permit is obtained from the Engineering Department.  
 The subgrade of all streets and parking areas must be proof-rolled using a tri-axle tandem dump truck with a minimum certified weight of 70,000 lbs. fully loaded. The proof-roll is to be conducted under the direct supervision of the Township Engineer or his representative.

**Construction Castings:**

Note that all castings shall be of United States manufacture and NJDOT approved. If other than Campbell, Norwalk, Bridgman, Emporia, Quinn or East Jordan Ironworks castings are planned to be used, complete data must be submitted including, but not necessarily limited to, an affidavit certifying that the castings were made in the U.S.; load capacity based on the standard highway loading; weights and configurations of the castings and metallurgical analysis. All grades are to be "bi-cycle safe". Curb pieces for Type "B" inlets are to be Type "N-Eco" for all new and replacement structures.

**210-45. TRENCHES**

All trenches or ditches which cross an existing street or which are dug for sewers, water mains, gas mains or other utilities, including the house connections for these utilities, shall be filled with Quarry Process Stone. The stone shall be placed in layers not exceeding twelve (12) inches in depth and shall be sprinkled with water and mechanically compacted. All soft spots and depressions in a surface, which has been graded, will be removed and filled with stone of a size to be determined by the Township Engineer. All trenches which are dug in a future street or existing R.O.W., on which no subbase or pavement has been constructed shall be backfilled as indicated above or maybe backfilled with suitable on-site excavated materials or imported fill.

Prior to using any on-site and/or imported soil materials the contractor or any individual or firm shall employ a recognized soil laboratory to secure soil samples, perform the necessary laboratory analysis and establish the compaction and other criteria necessary for the proper placement of the backfill. A report of the laboratory findings, including the compaction specifications, shall be submitted to the Township Engineer for review and approval prior to commencing any backfill operations using on-site and/or imported soil materials.

During the backfilling operations, the contractor or any individual or firm engaged in backfilling operations shall employ a Professional Engineer, Licensed in the State of New Jersey, or his representative, who is regularly engaged in the practice of geotechnical engineering and who is trained in soil mechanics, to observe the placement of the backfill. The soils engineer shall file daily reports, with the Township Engineer indicating the results of the compaction and upon the completion of the project file a final certification indicating that the backfill material has been placed and compacted in accordance with the recommendations contained in the approved laboratory report.

Backfill in trenches in field or lawn areas shall comply with the requirements for on-site or imported soil materials, as indicated above.

**PIPING**  
 All sewer, sanitary sewer, and water main piping shall maintain a minimum of ten (10) feet from building foundations or other structures.

**DRIVEWAYS**

Driveway connections to street right-of-ways shall maintain a perpendicular alignment and comply with Article XI - Off Street Parking and Loading

**COLD WEATHER PAVING RESTRICTIONS**

DURING THE COLD WEATHER MONTHS FRANKLIN TOWNSHIP ENGINEERING WILL ENFORCE THE FOLLOWING REGULATIONS TAKEN FROM N. J. STATE STANDARDS:

- 1.) The surface upon which the bituminous concrete is to be placed shall be clean of all foreign and loose material, dry and free from ice when the paving operations are about to start and shall be maintained in that condition.
- 2.) Bituminous concrete mixtures shall be placed when the combinations of laydown and base surface temperatures are within the limits shown in the table below, when the weather is not rainy, and when the roadbed is in satisfactory condition.
- 3.) Temperature testing equipment shall be supplied by the contractor. Laydown temperature will be measured in the receiving hopper of the paver.

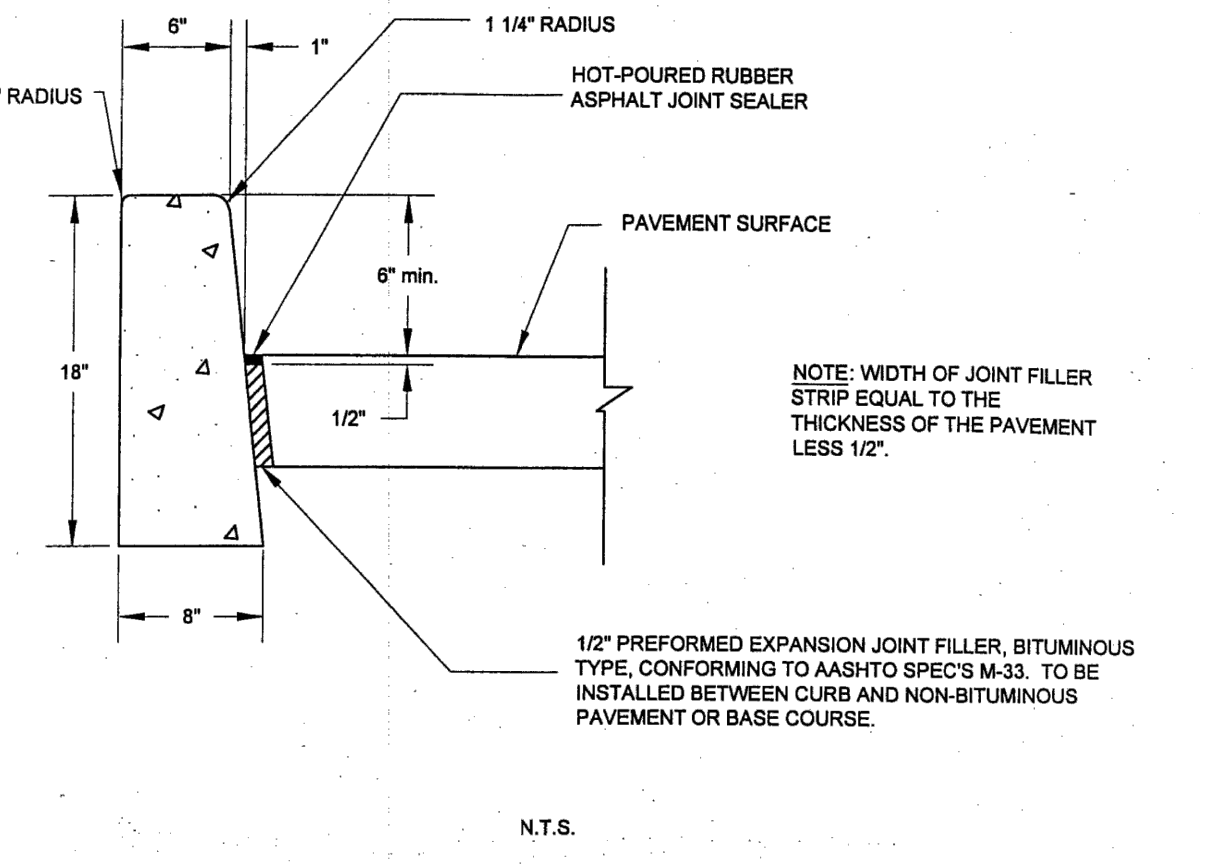
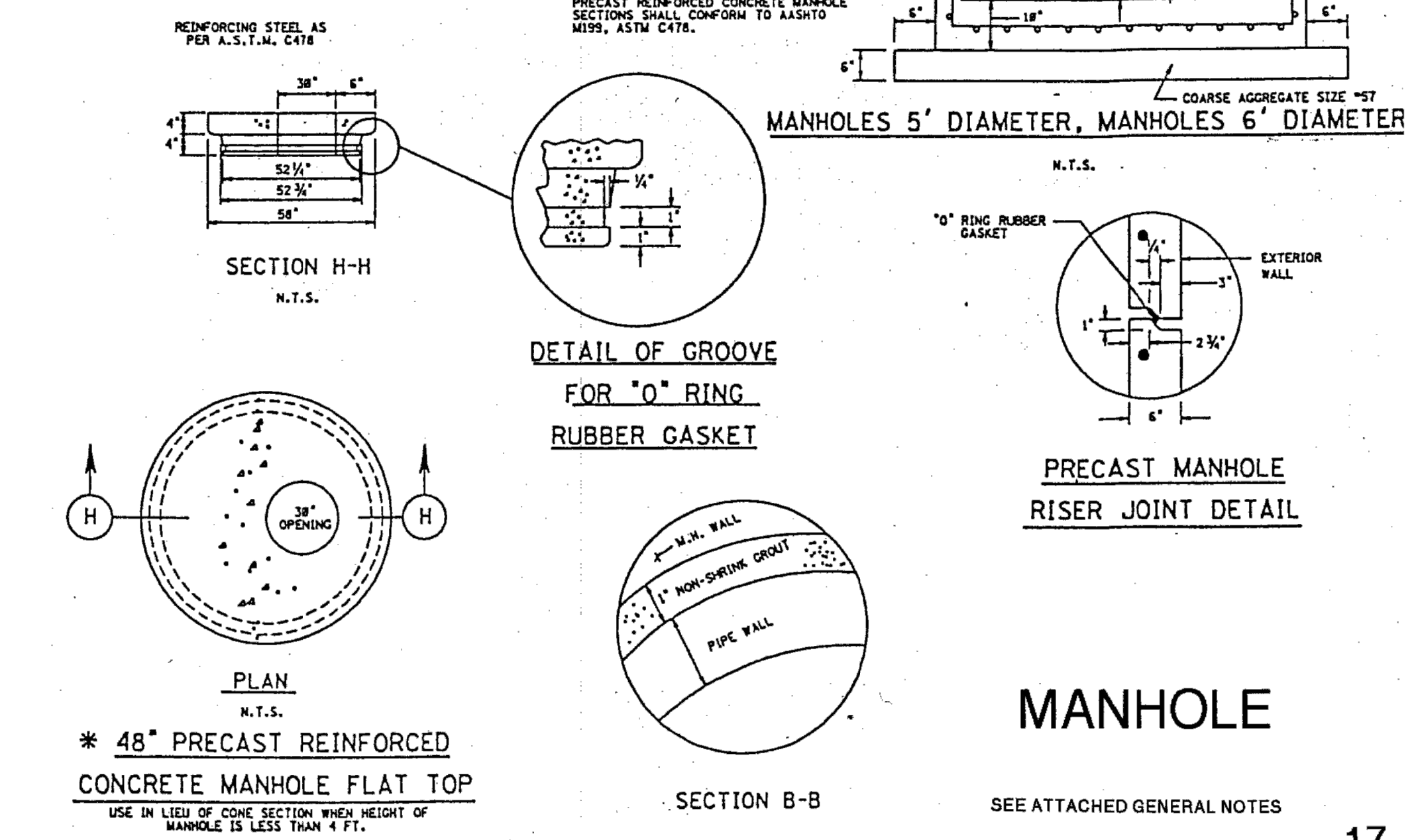
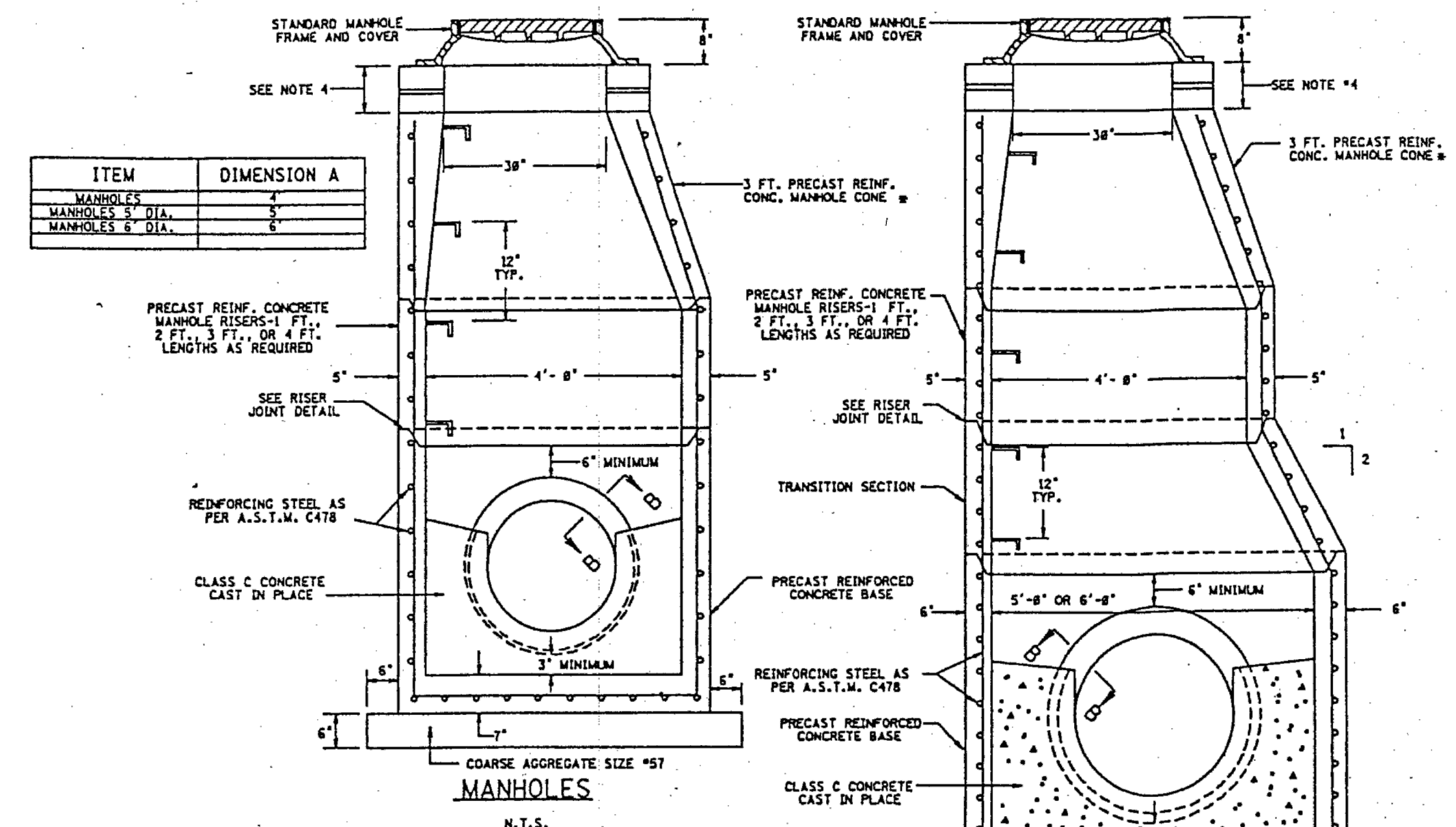
Base Temp	Minimum Laydown Temperature (Degrees F)			
	1	1 1/2	2	2 and Greater
20-30	(1)	(1)	(1)	200
31-40	(1)	(1)	(1)	200
41-50	(1)	(1)	(1)	200
51-60	(1)	(1)	(1)	200
61-70	(1)	(1)	(1)	200
71-80	(1)	(1)	(1)	200
81-90	(1)	(1)	(1)	200
91 and over	(1)	(1)	(1)	200

Note - No paving permitted.

**COLD WEATHER CONCRETE RESTRICTIONS**

DURING THE COLD WEATHER MONTHS FRANKLIN TOWNSHIP ENGINEERING WILL ENFORCE THE FOLLOWING REGULATIONS TAKEN FROM ACI, PCA, AND N. J. STATE STANDARDS:

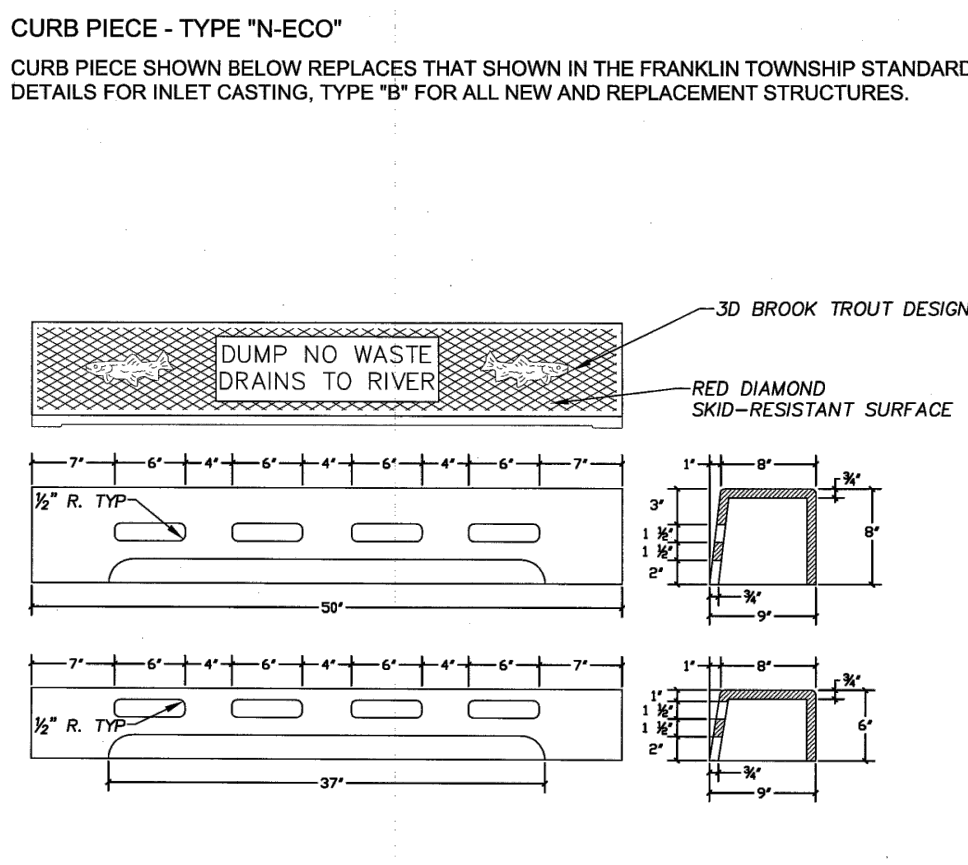
- 1.) No concrete shall be placed unless the ambient temperature is 40 degrees F, on a rising thermometer or if the interior of the forms and any surface adjacent to the new concrete are preheated to that temperature or higher.
- 2.) Heating of forms shall be by forced air or radiation, no open flame heating will be allowed.
- 3.) The minimum temperature of fresh concrete as placed and maintained shall be 55°F.
- 4.) The duration of recommended concrete temperature shall be six (6) days for conventional concrete and three (3) days for high-early-strength concrete.
- 5.) Calcium Chloride is not allowed as a concrete accelerator. Ace-1-Guard 80 is acceptable.
- 6.) Adequate acceptable insulating materials shall be provided to maintain the recommended temperature. Blankets, or dry salt hay covered with tarpaulins or polyethylene film are acceptable.



1. CONCRETE TO BE NJDOT CLASS "B" (AIR ENTRAINMENT).
2. TRANSVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH PREFORMED, BITUMINOUS-IMPREGNATED FIBER JOINT FILLER, COMPLYING WITH THE REQUIREMENTS OF AASHTO M-213, RECESSED 1/4" FROM THE FRONT FACE AND TOP OF THE CURB.
3. DUMMY JOINTS (FORMED) SHALL BE INSTALLED MIDWAY BETWEEN EXPANSION JOINTS.

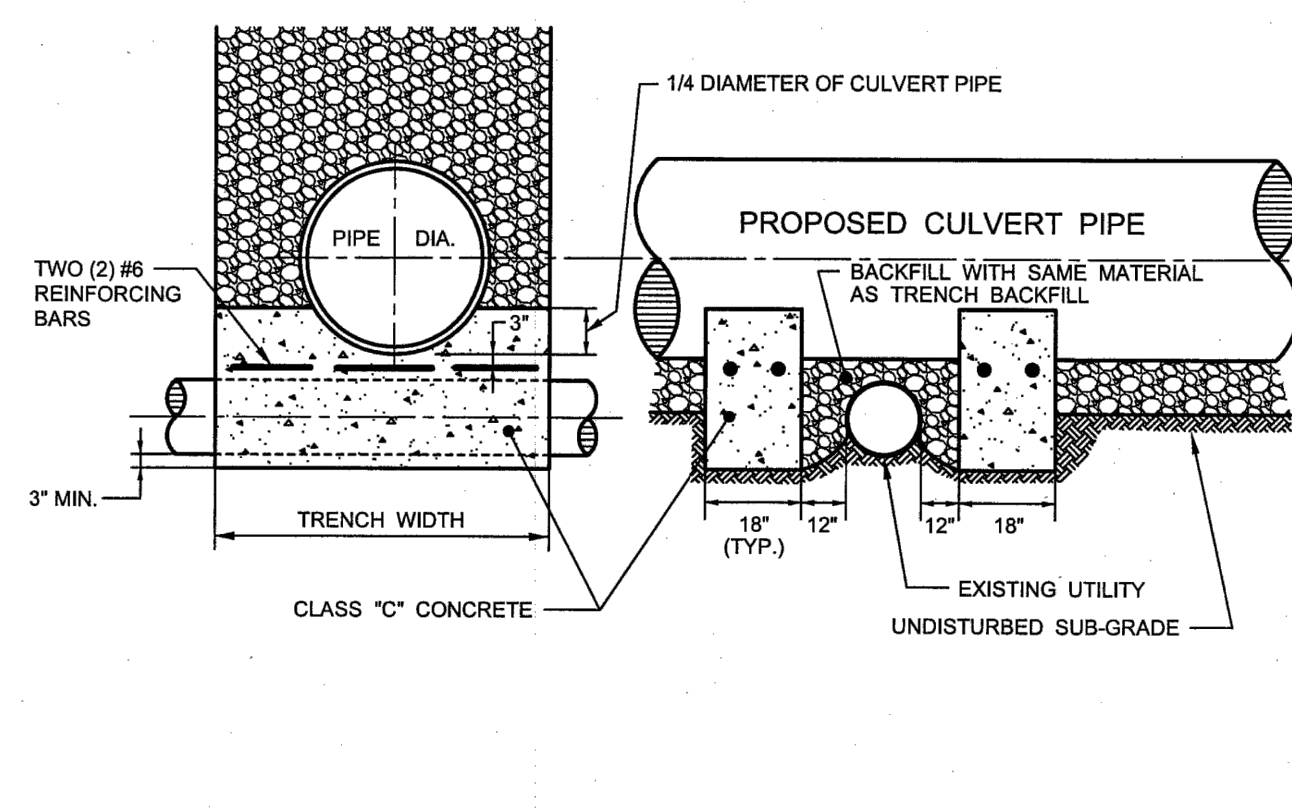
**CONCRETE VERTICAL CURB**

FRANKLIN TOWNSHIP SOMERSET COUNTY



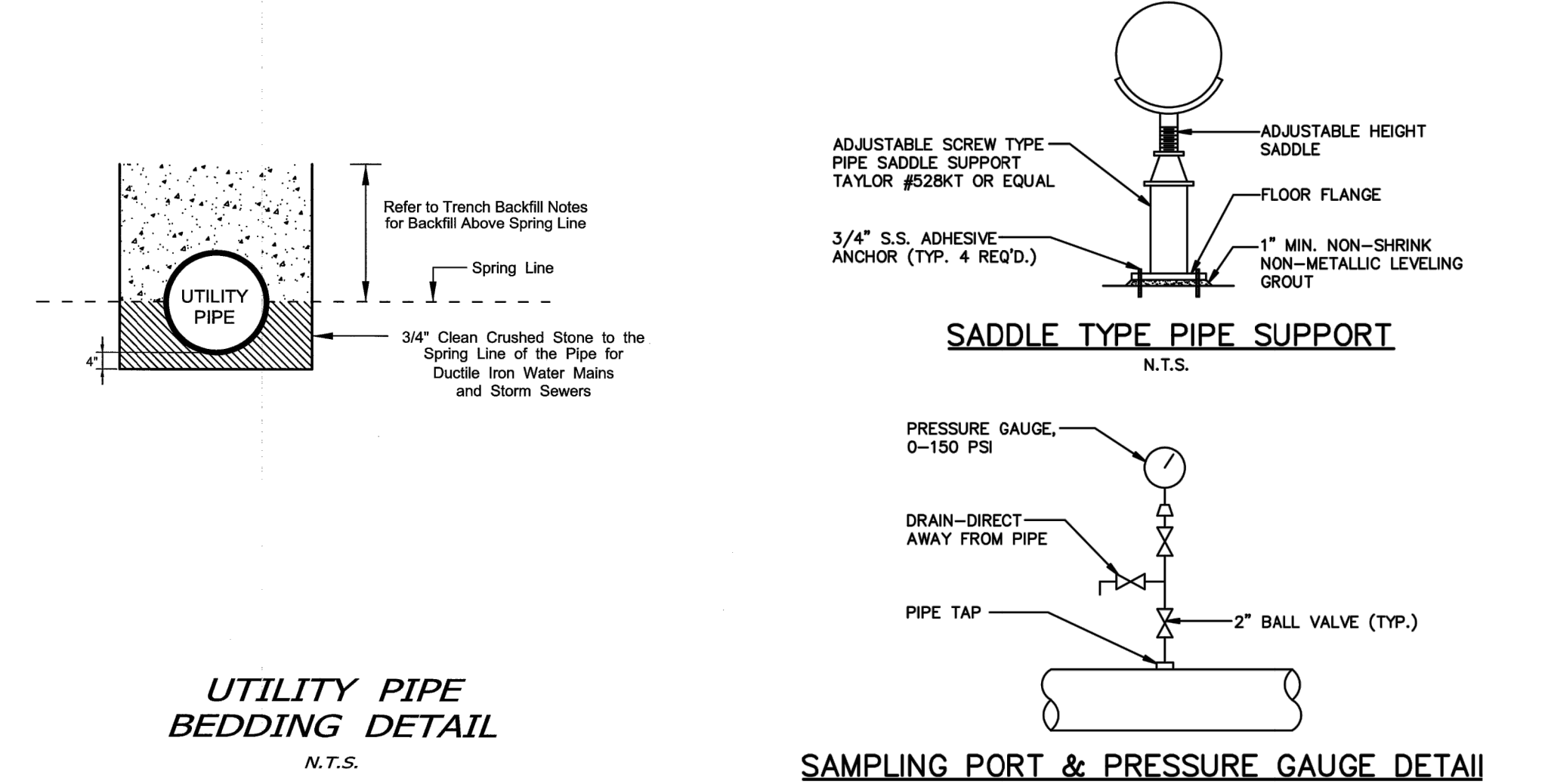
**CURB PIECE - TYPE "N-ECO"**

Franklin Township Somerset County, NJ



**CONCRETE PIPE CRADLES**

Franklin Township Somerset County, NJ



Franklin Township Somerset County, NJ

IN CASE OF DISCREPANCY, TOWNSHIP STANDARD DETAILS SHALL HOLD  
 THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

**DYNAMIC ENGINEERING**  
 LAND DEVELOPMENT CONSULTING • PERMITTING • GEOTECHNICAL • ENVIRONMENTAL • SURVEY • PLANNING & ZONING

**FRANKLIN TOWNSHIP CONSTRUCTION DETAILS**

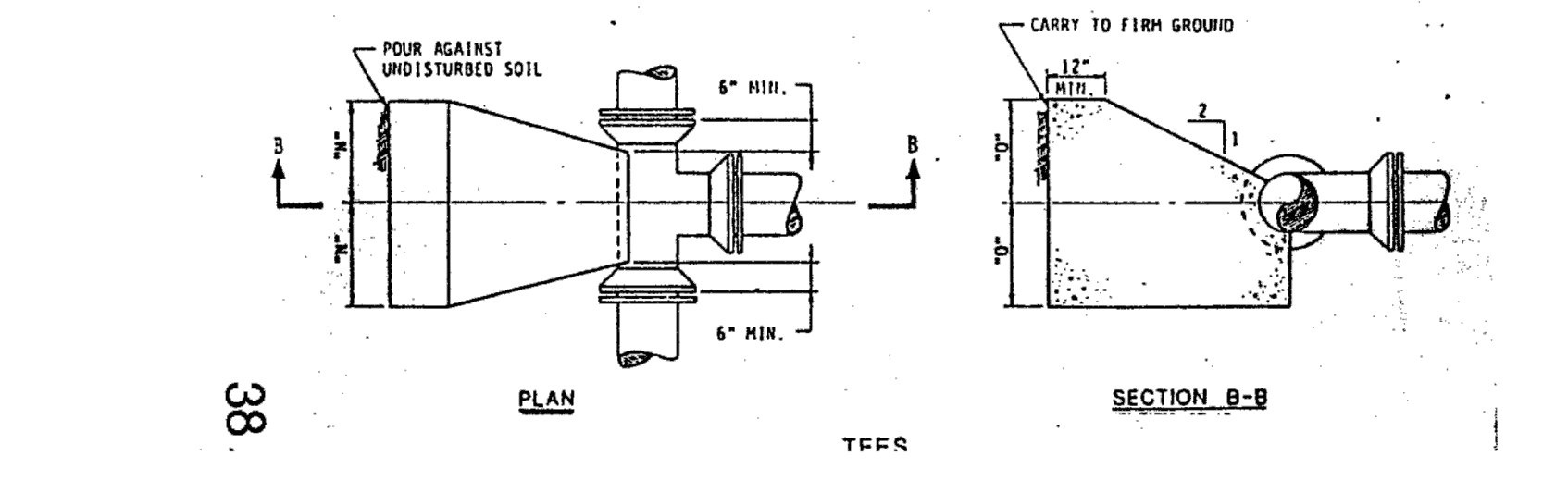
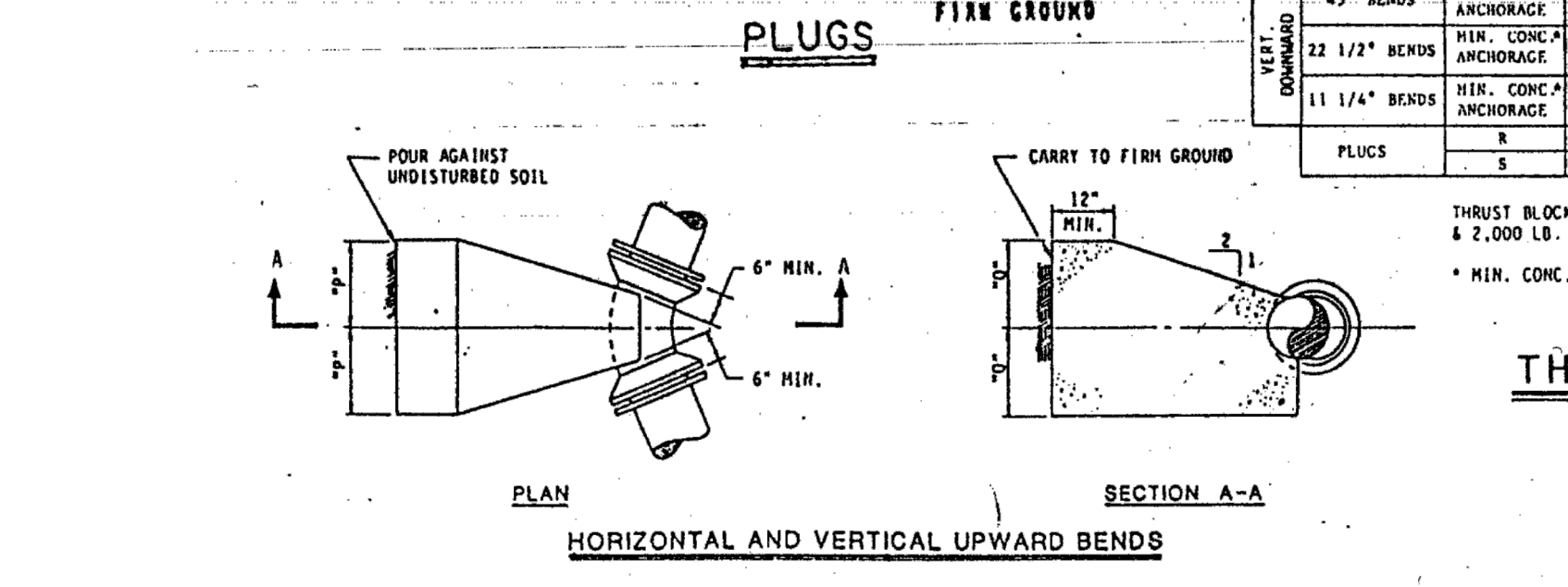
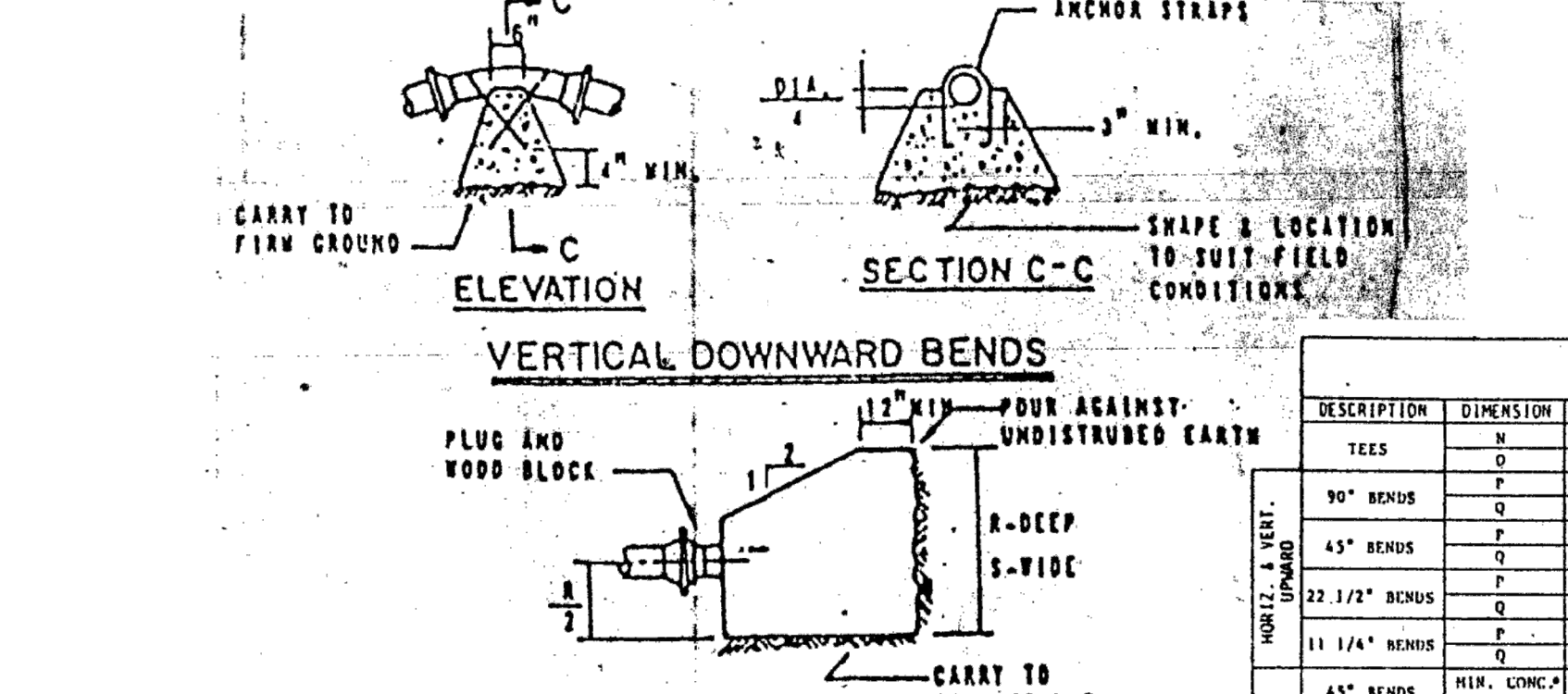
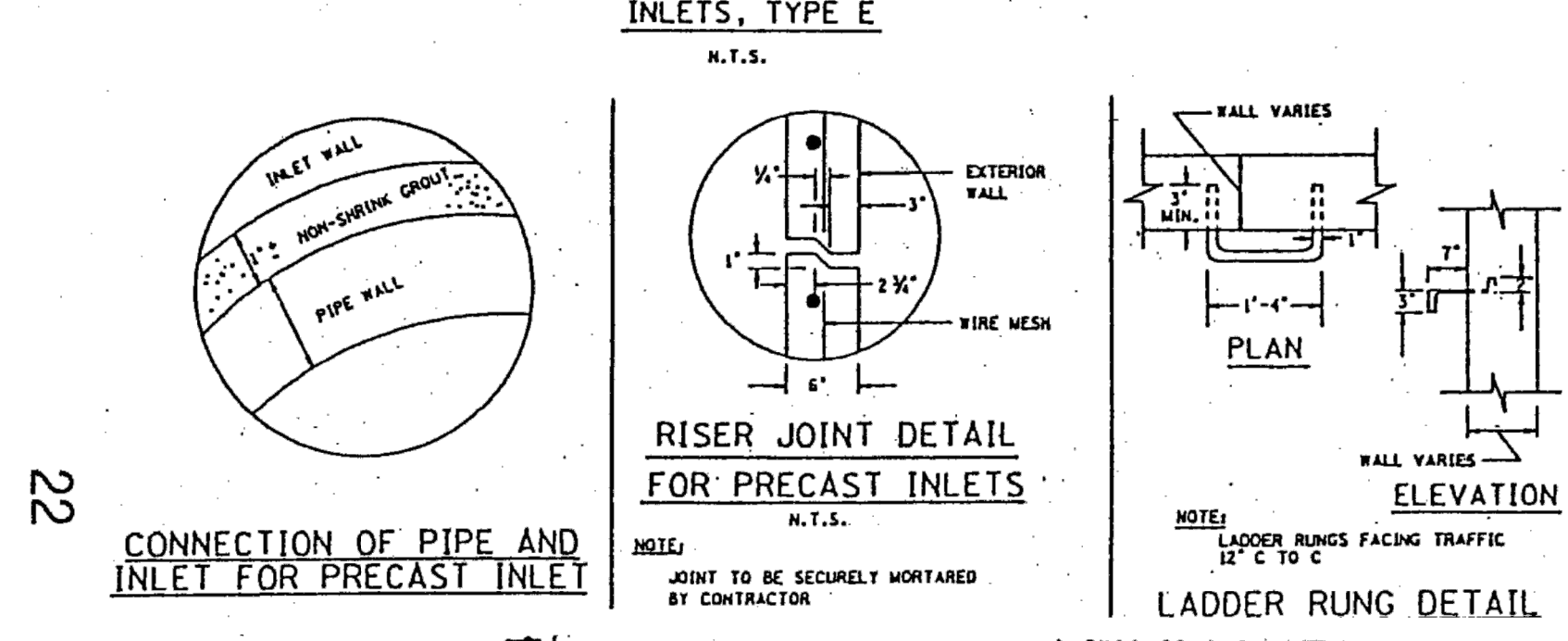
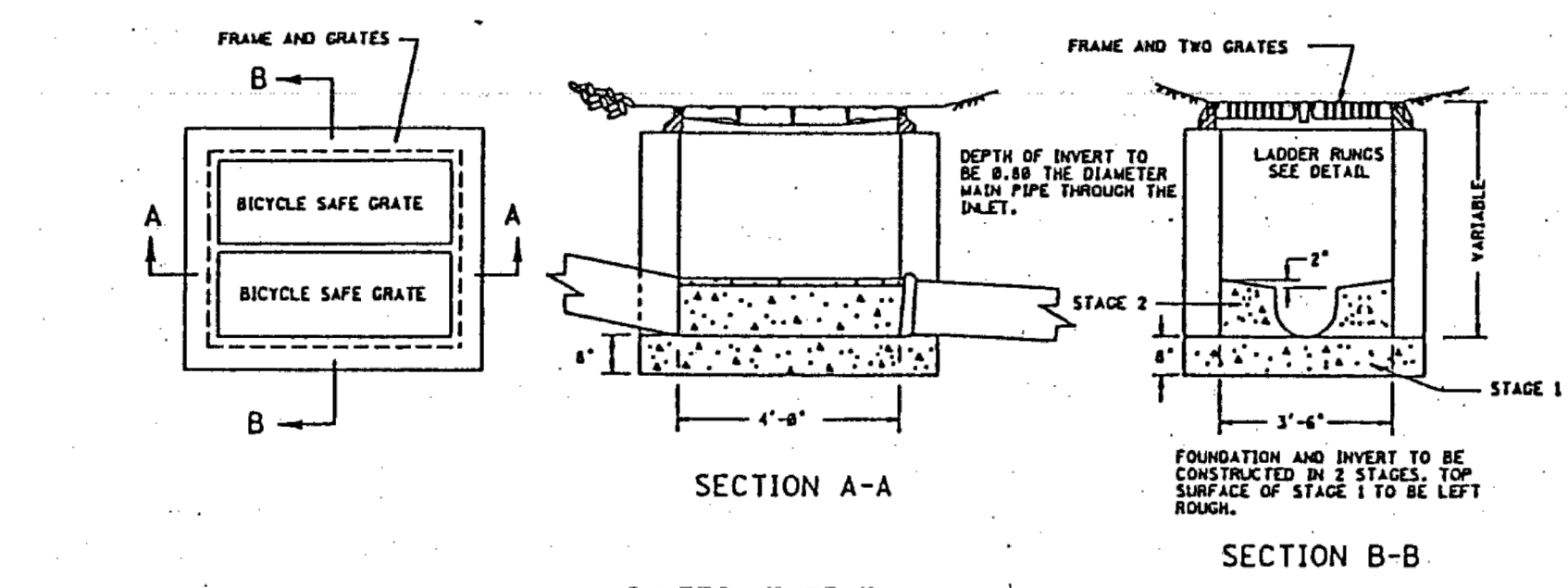
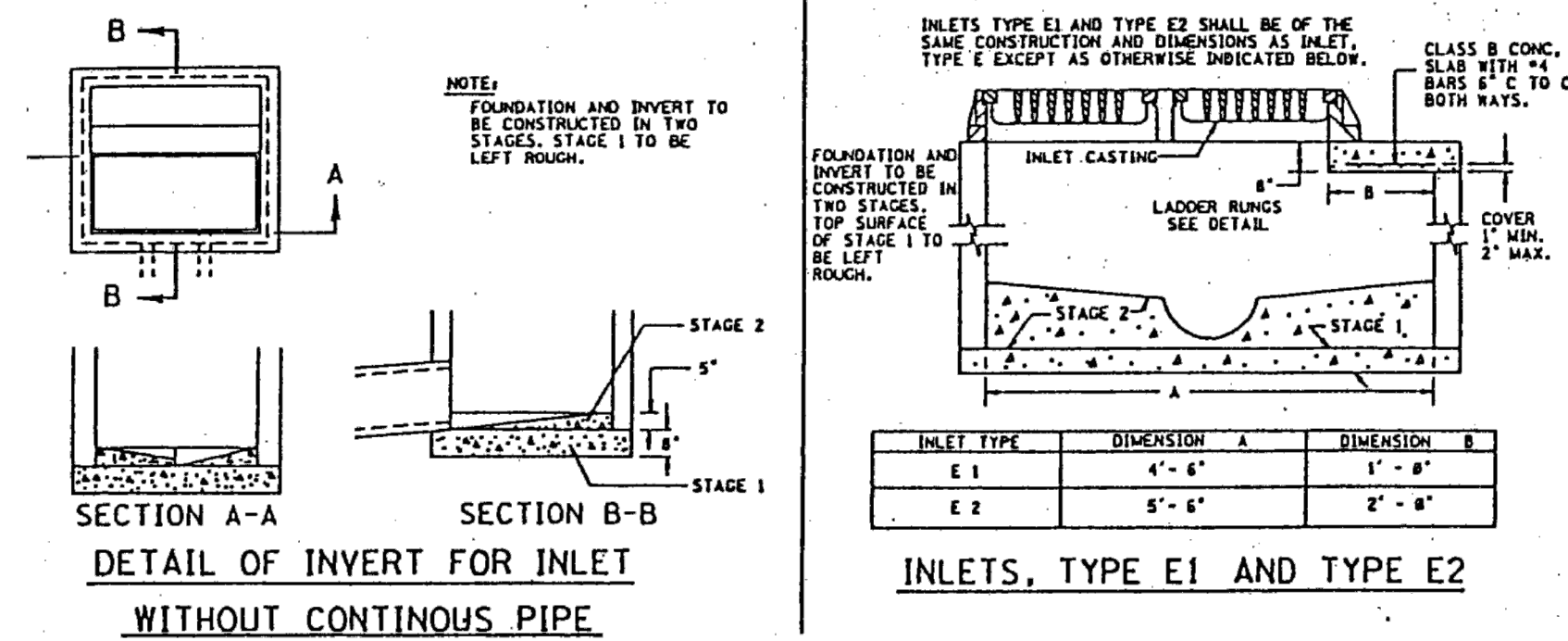
PROJECT: HARBOR GROUP PROPOSED WAREHOUSE & SITE IMPROVEMENTS  
 BLOCK 528.04, LOTS 19.31 & 19.32  
 110-150 BELMONT DRIVE  
 TOWNSHIP OF FRANKLIN, SOMERSET COUNTY, NEW JERSEY

JOB No: 4035-99-001 DATE: 10/07/2021  
 DRAWN BY: MFZ SCALE: (H) NOT TO (V) SCALE  
 DESIGNED BY: DT SHEET No: 16  
 CHECKED BY: KCK  
 CHECKED BY: KCK

**KYLE C. KAVINSKI** PROFESSIONAL ENGINEER  
 NEW JERSEY LICENSE No. 52985

**JOSHUA M. SEWALD** PROFESSIONAL ENGINEER  
 NEW JERSEY LICENSE No. 52908

PROTECT YOURSELF  
 ALL STATE ENGINEERS MUST BE LICENSED AND REGISTERED WITH THE STATE OF NEW JERSEY. PLEASE DO NOT BE DECEIVED BY UNLICENSED PRACTICES.  
 FOR THE STATE DIRECT PHONE NUMBER VISIT WWW.CALENTY.COM



**WATER PIPING, FITTINGS AND APPURTENANCES**

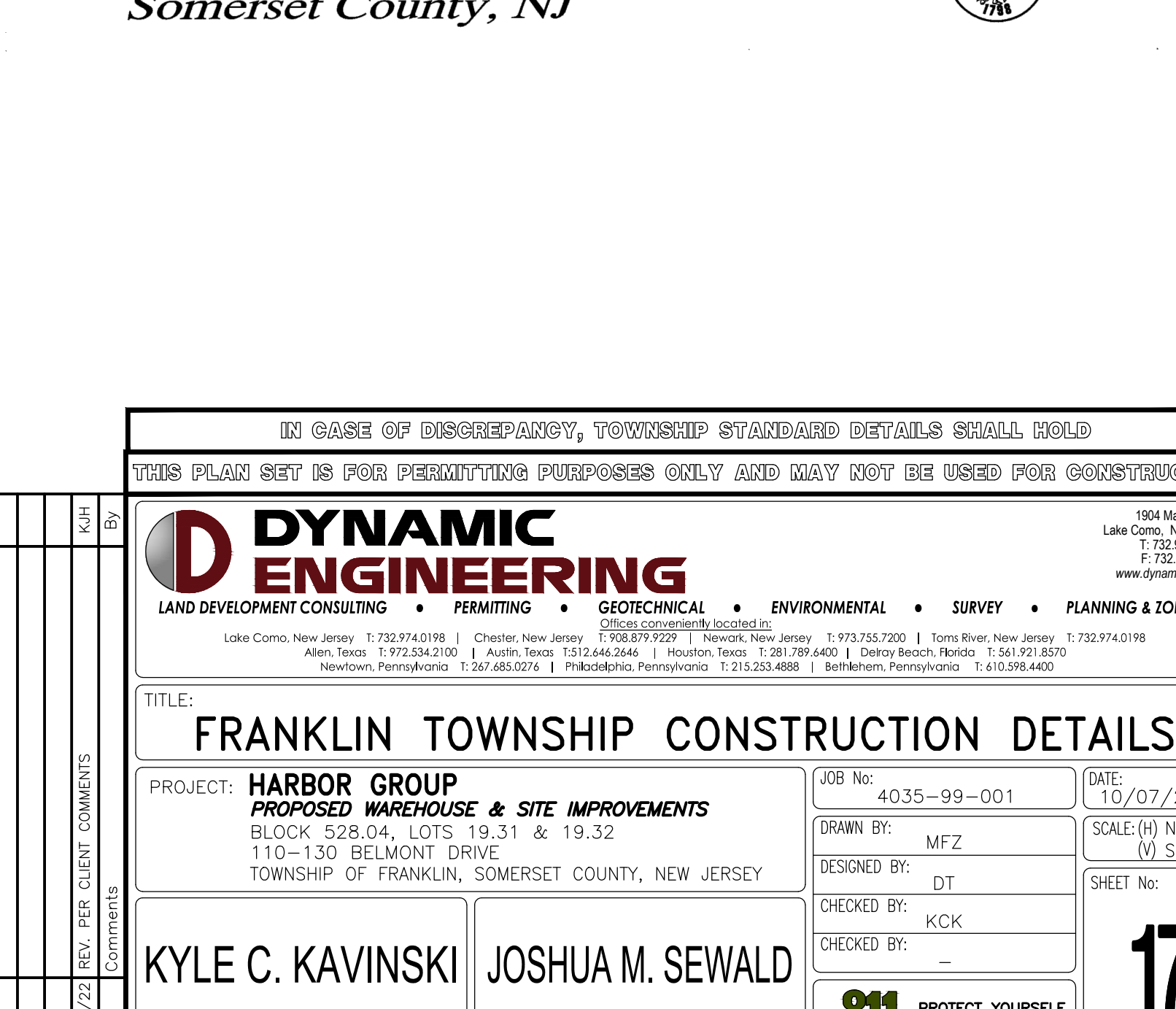
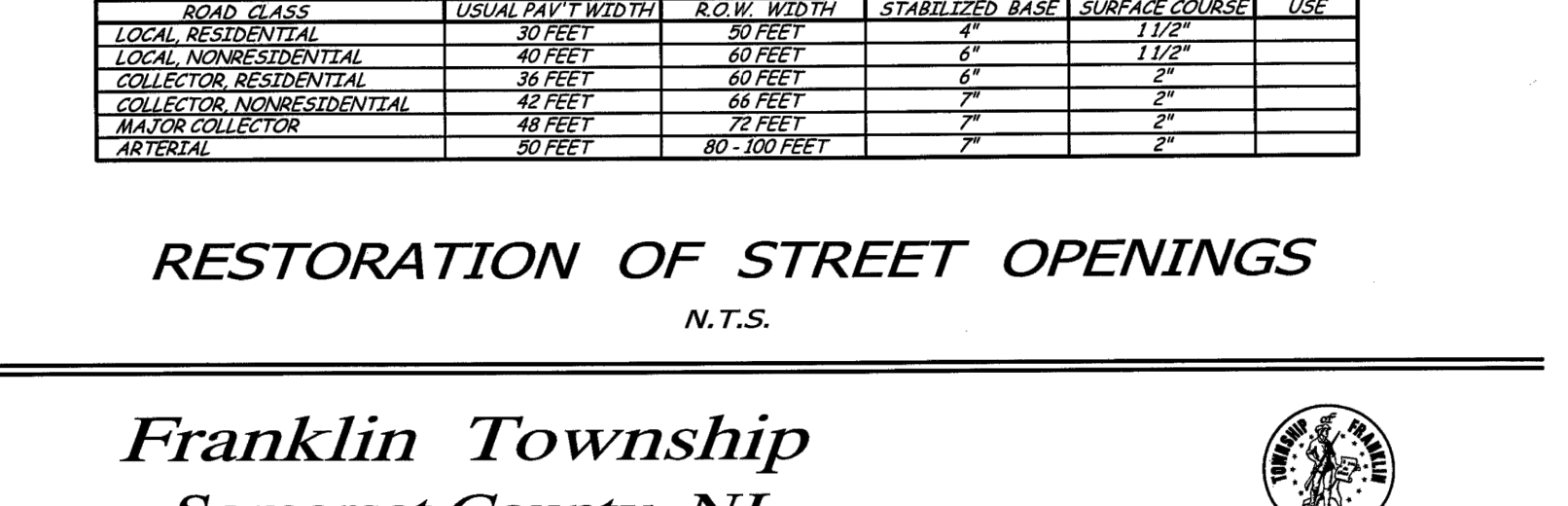
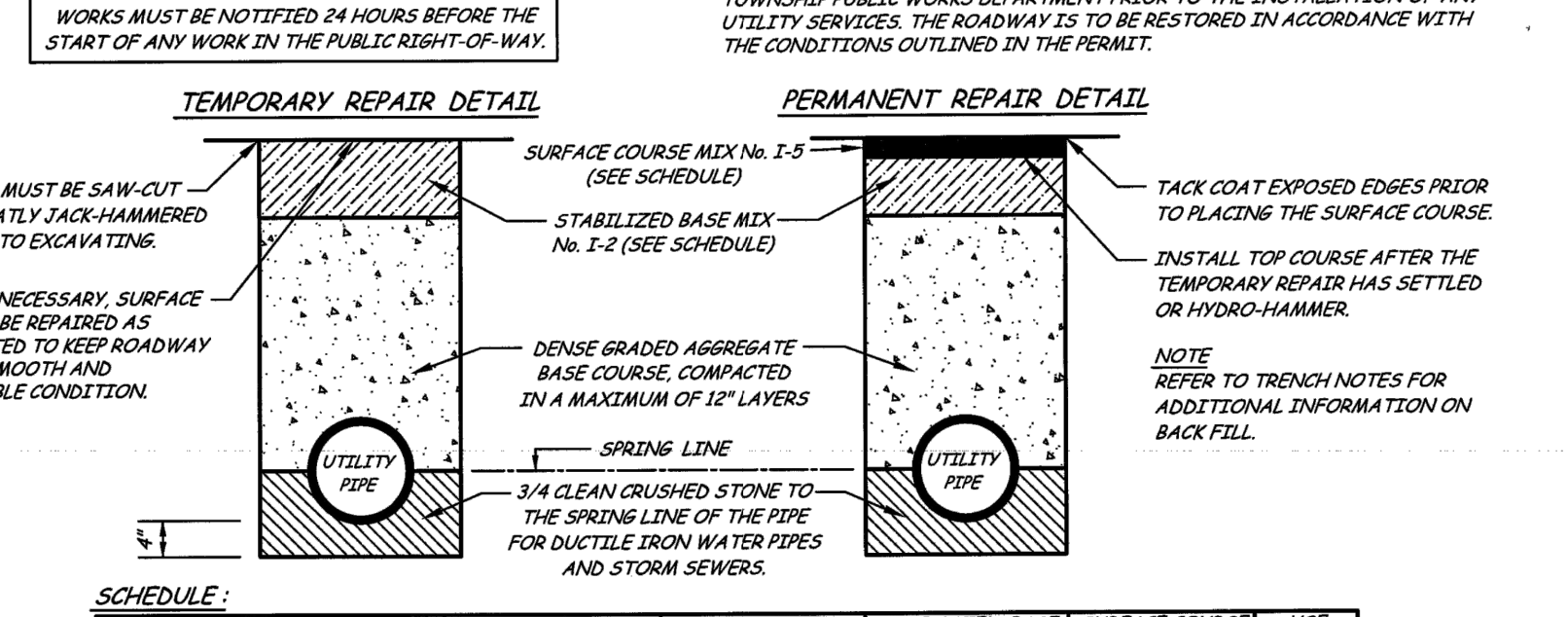
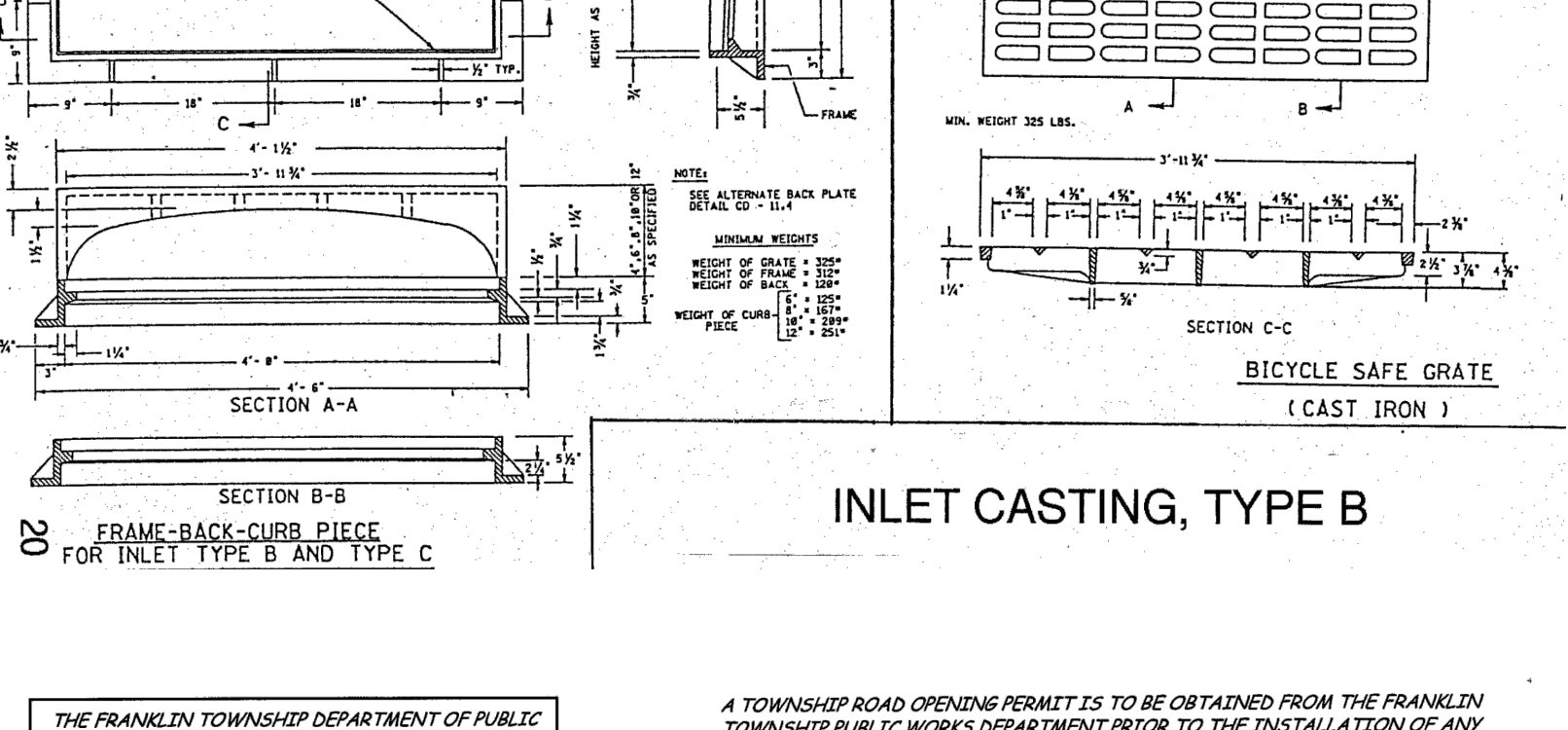
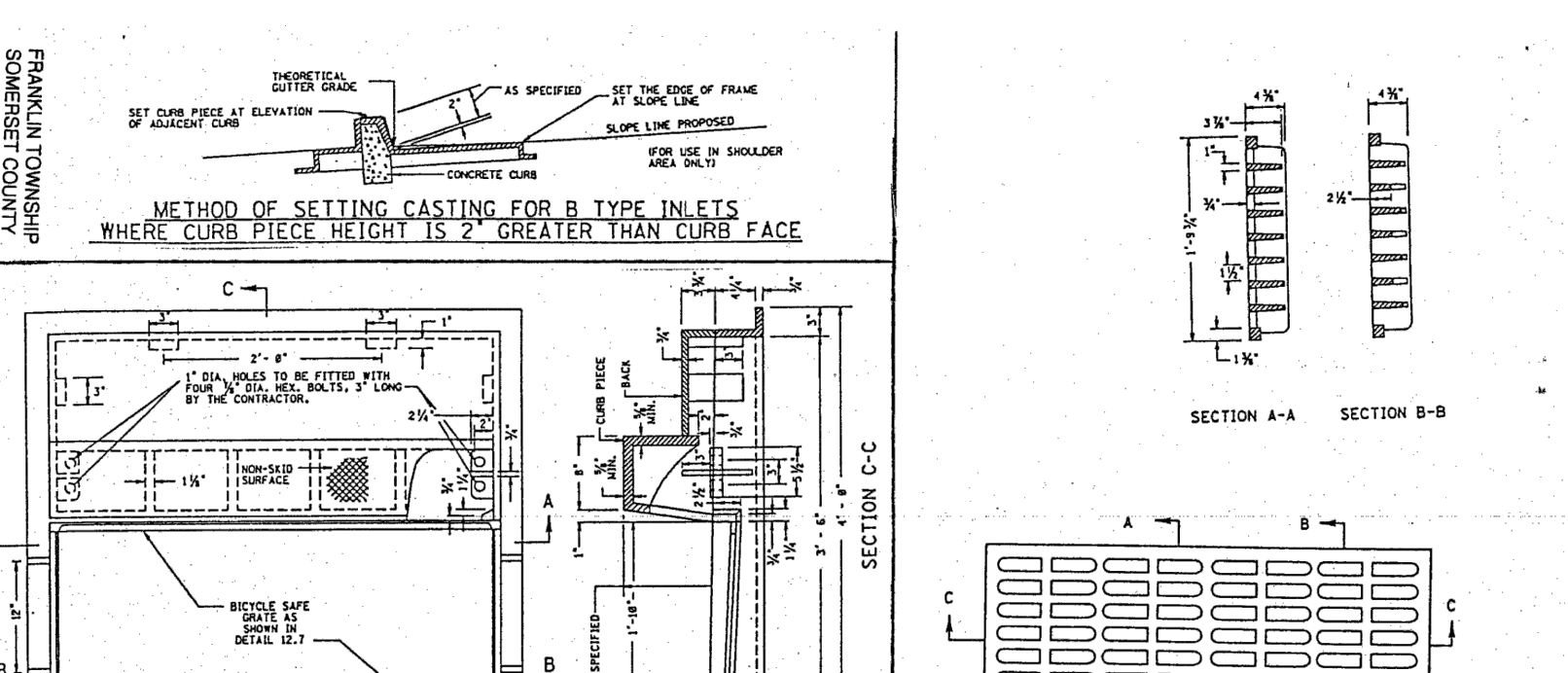
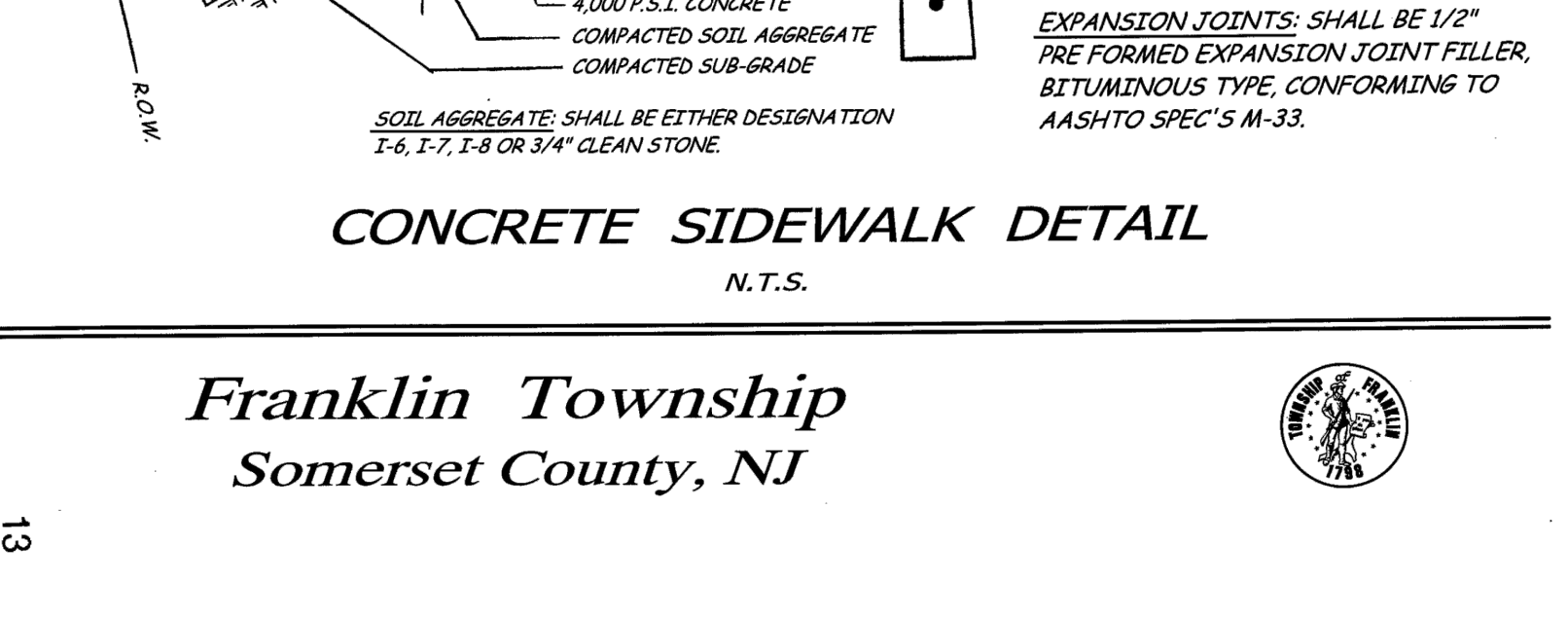
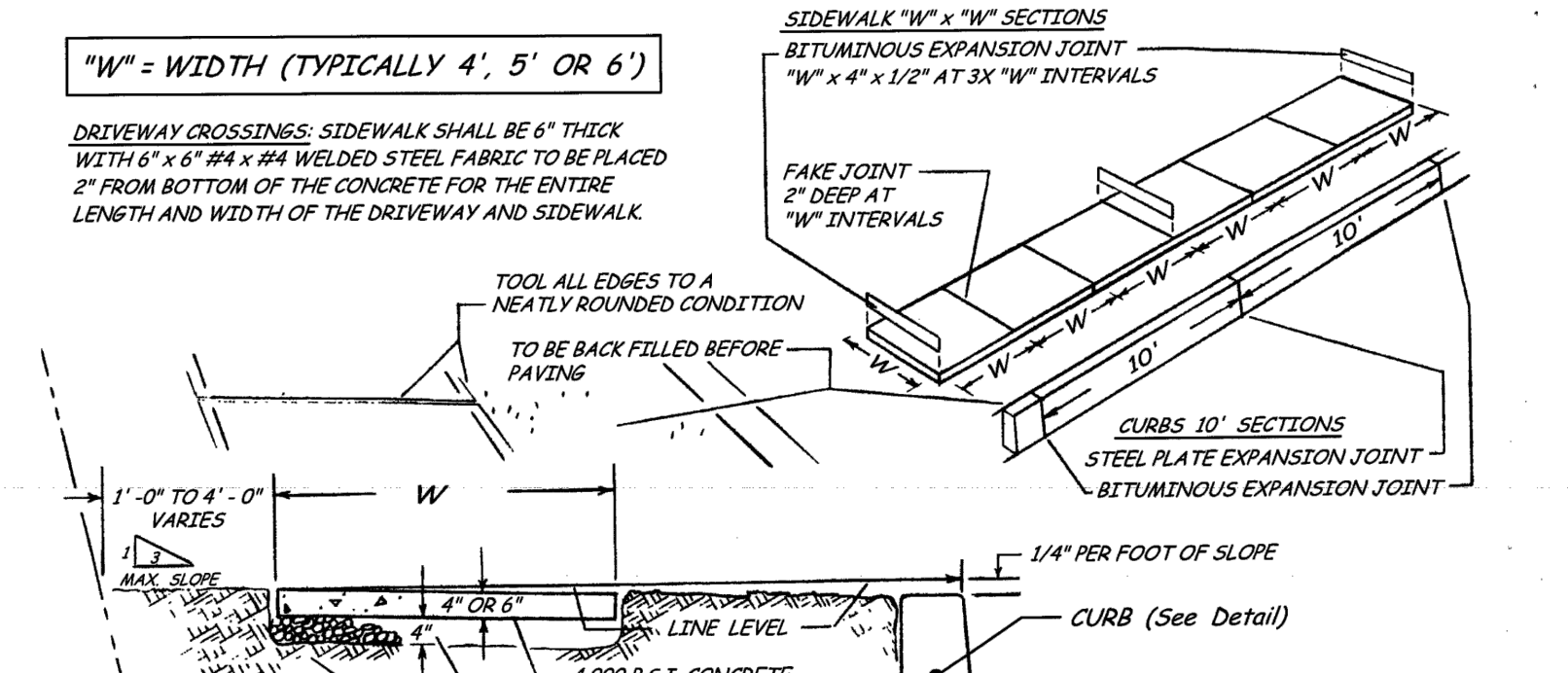
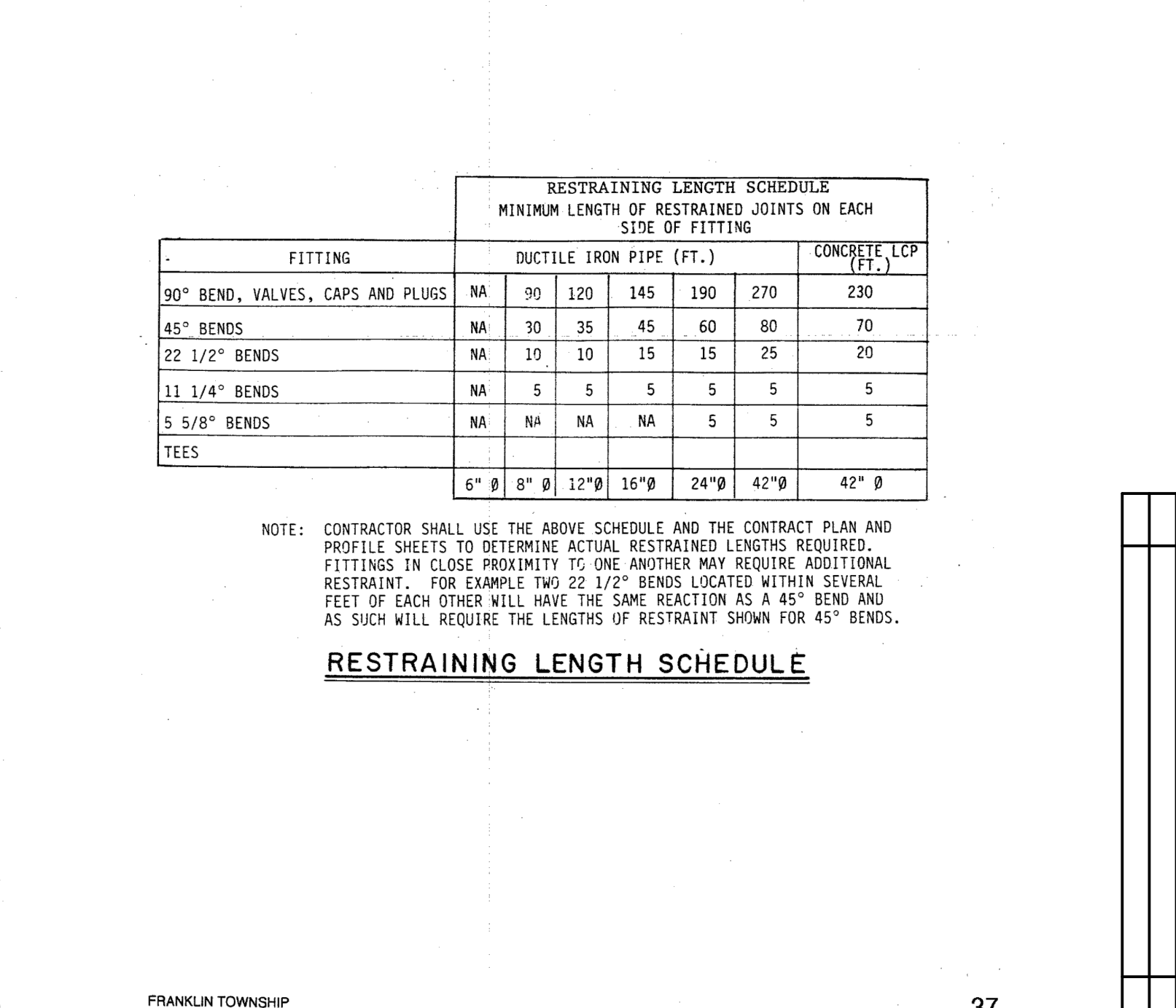
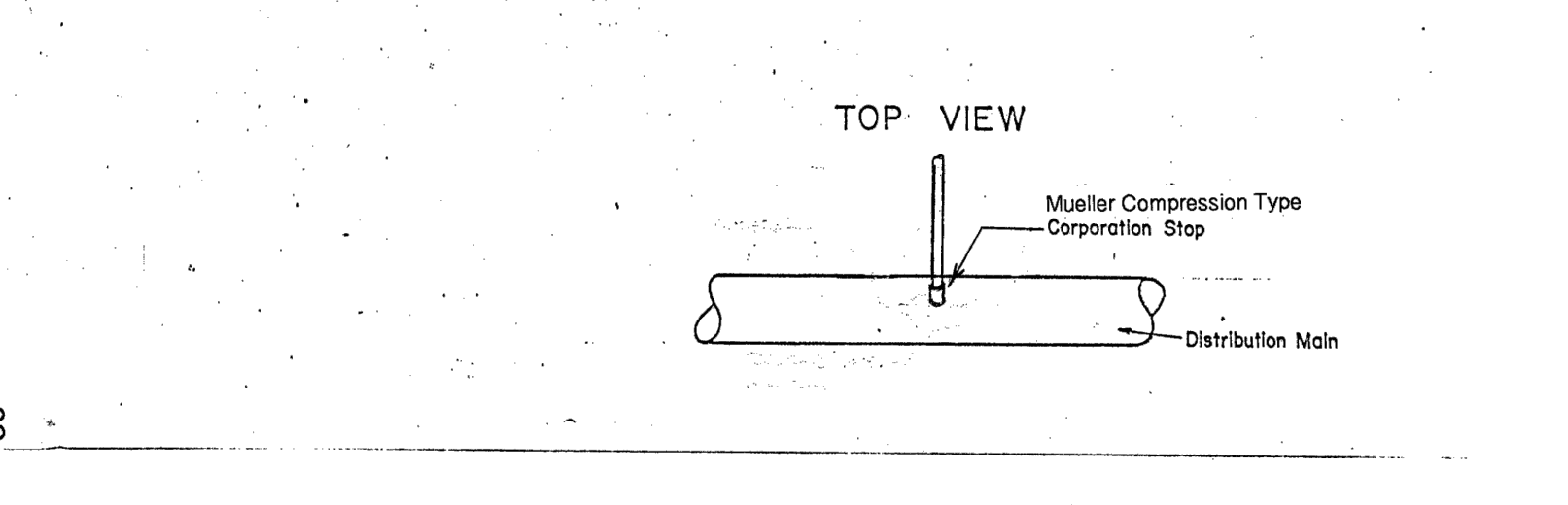
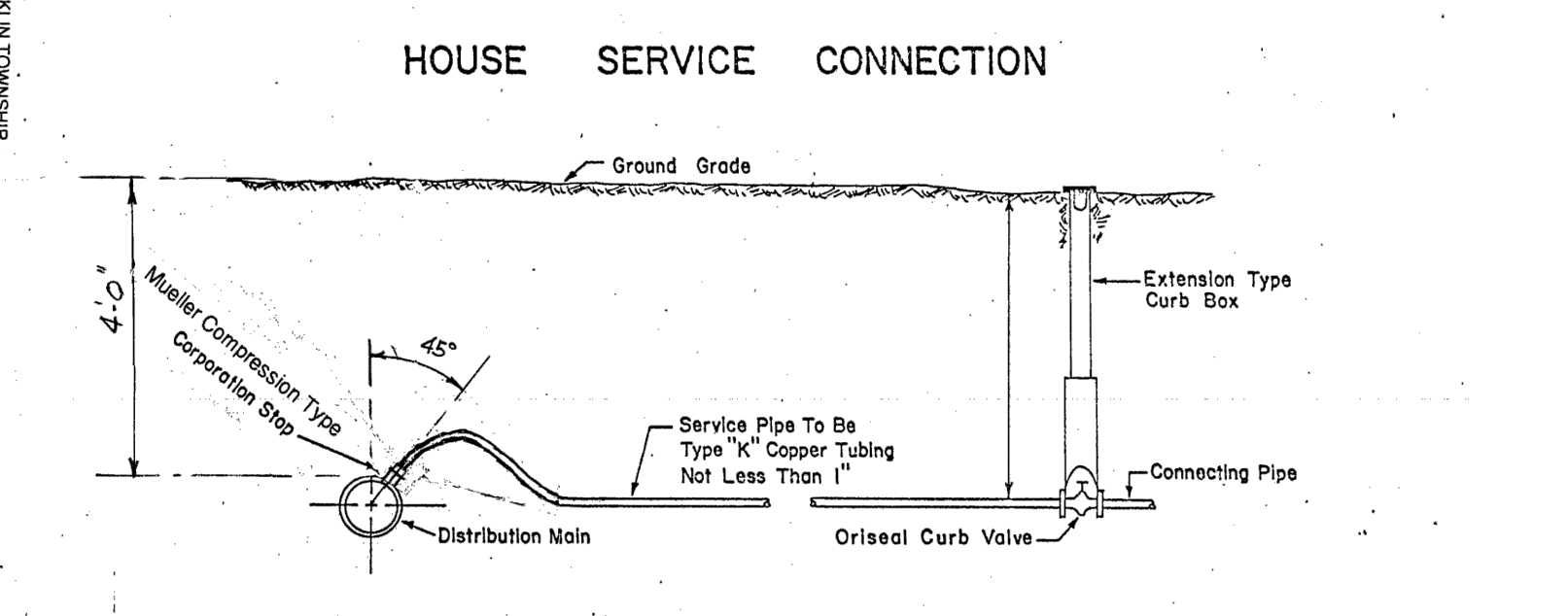
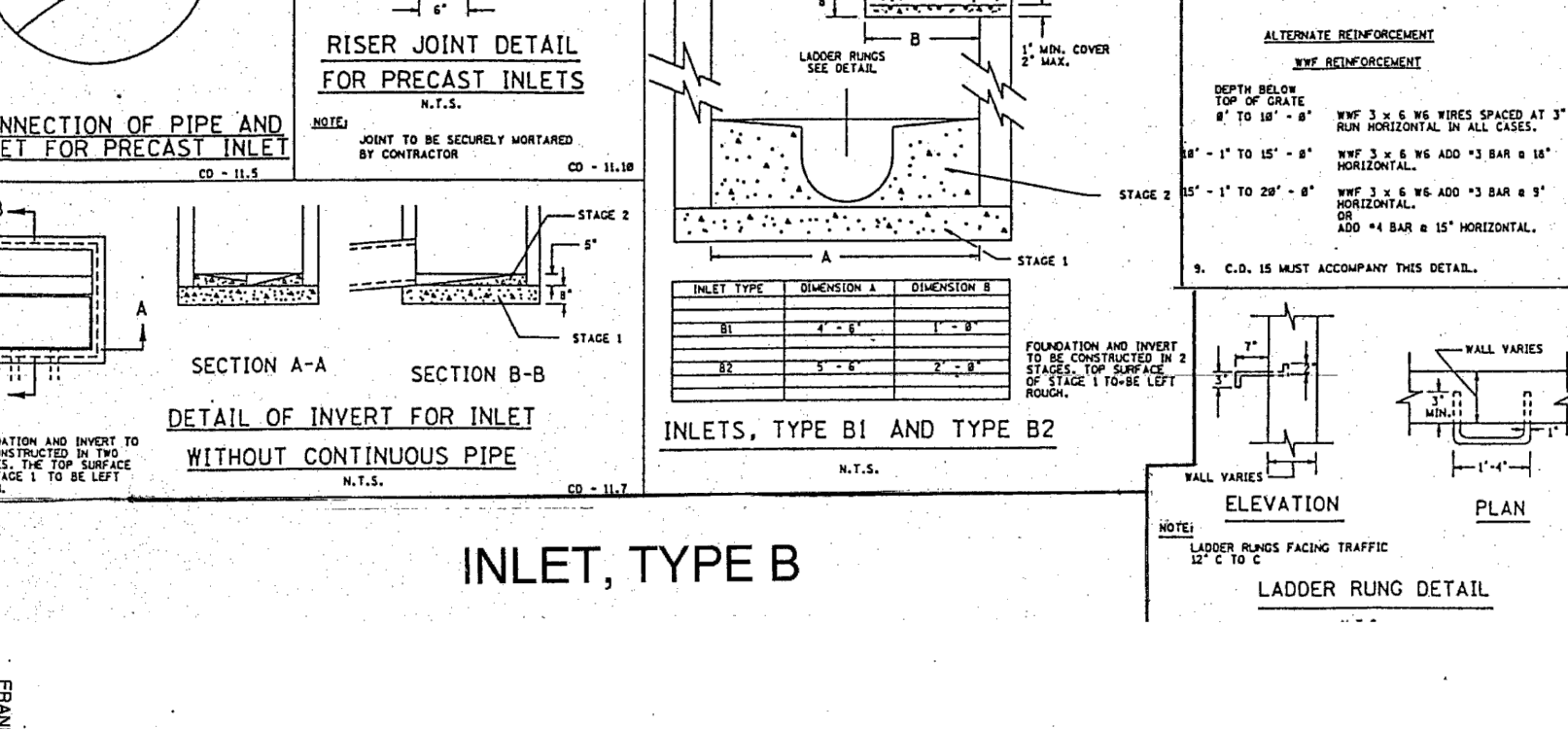
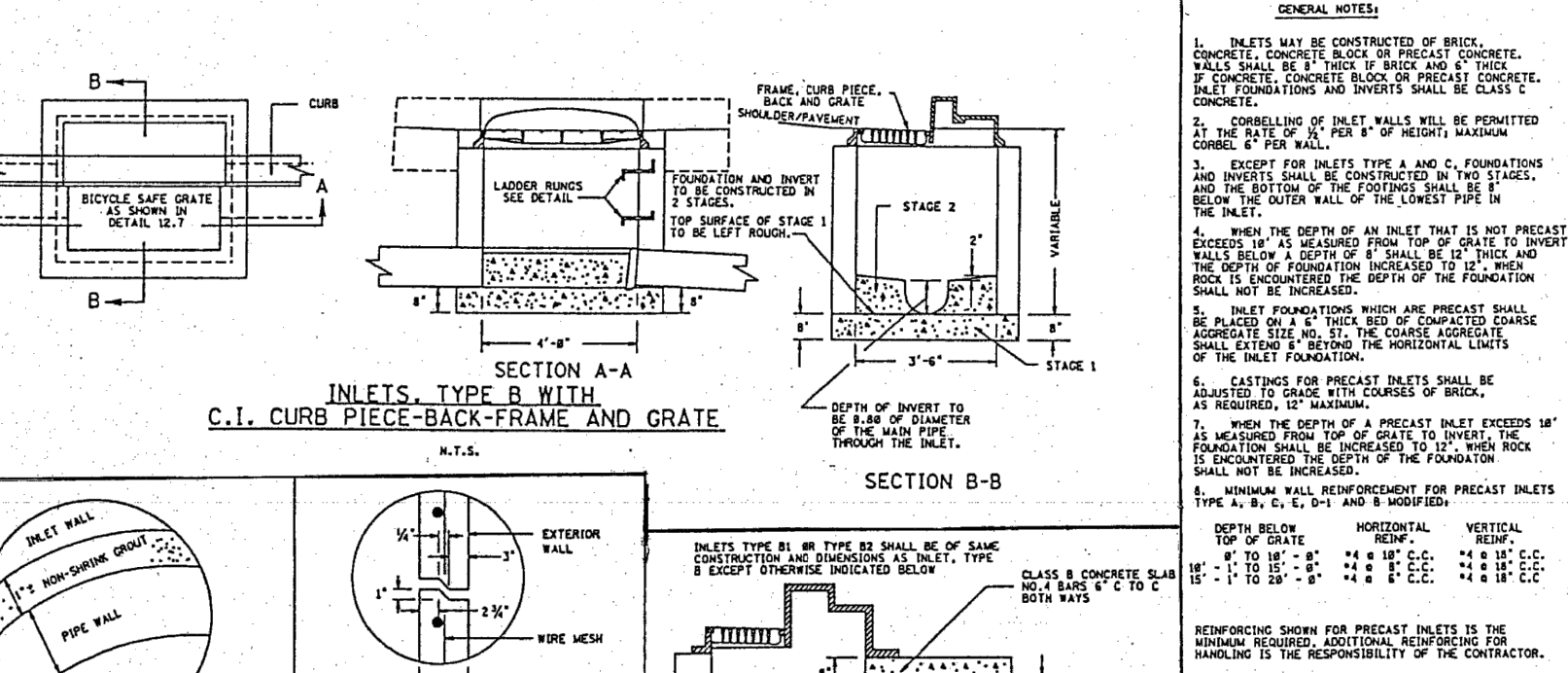
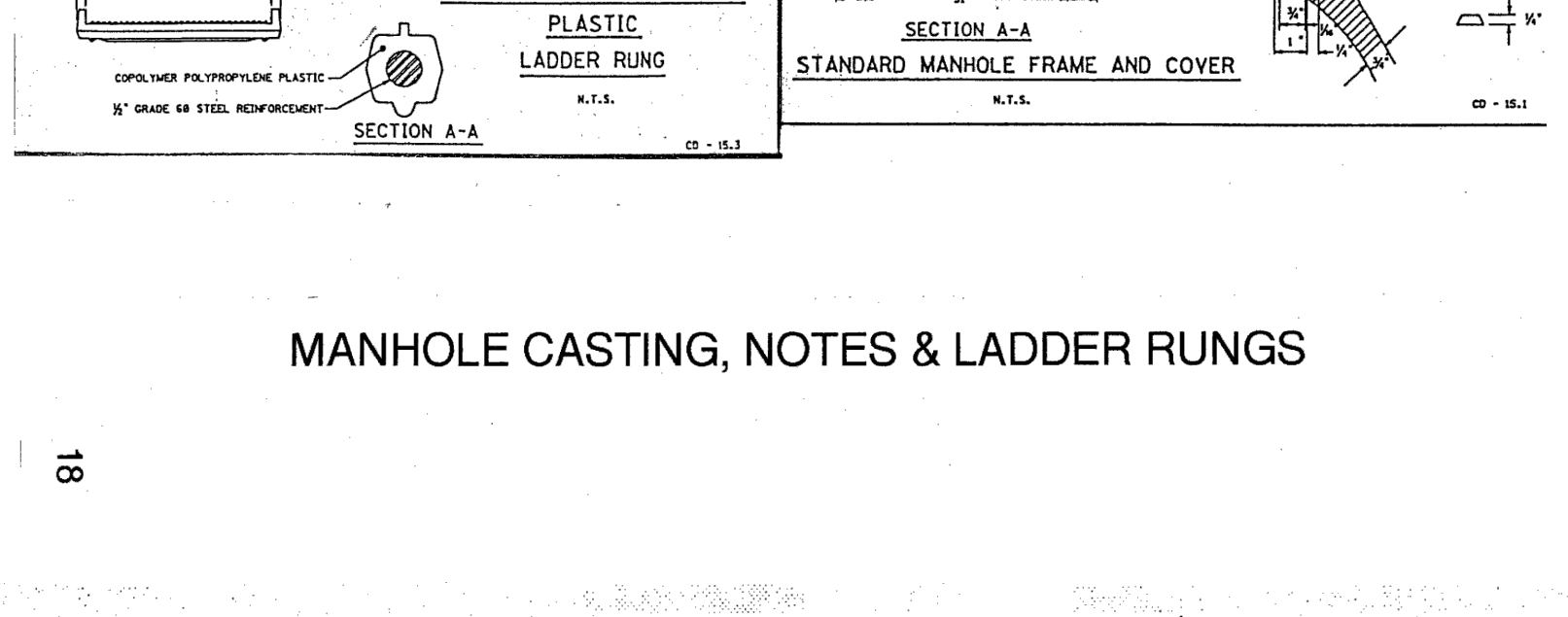
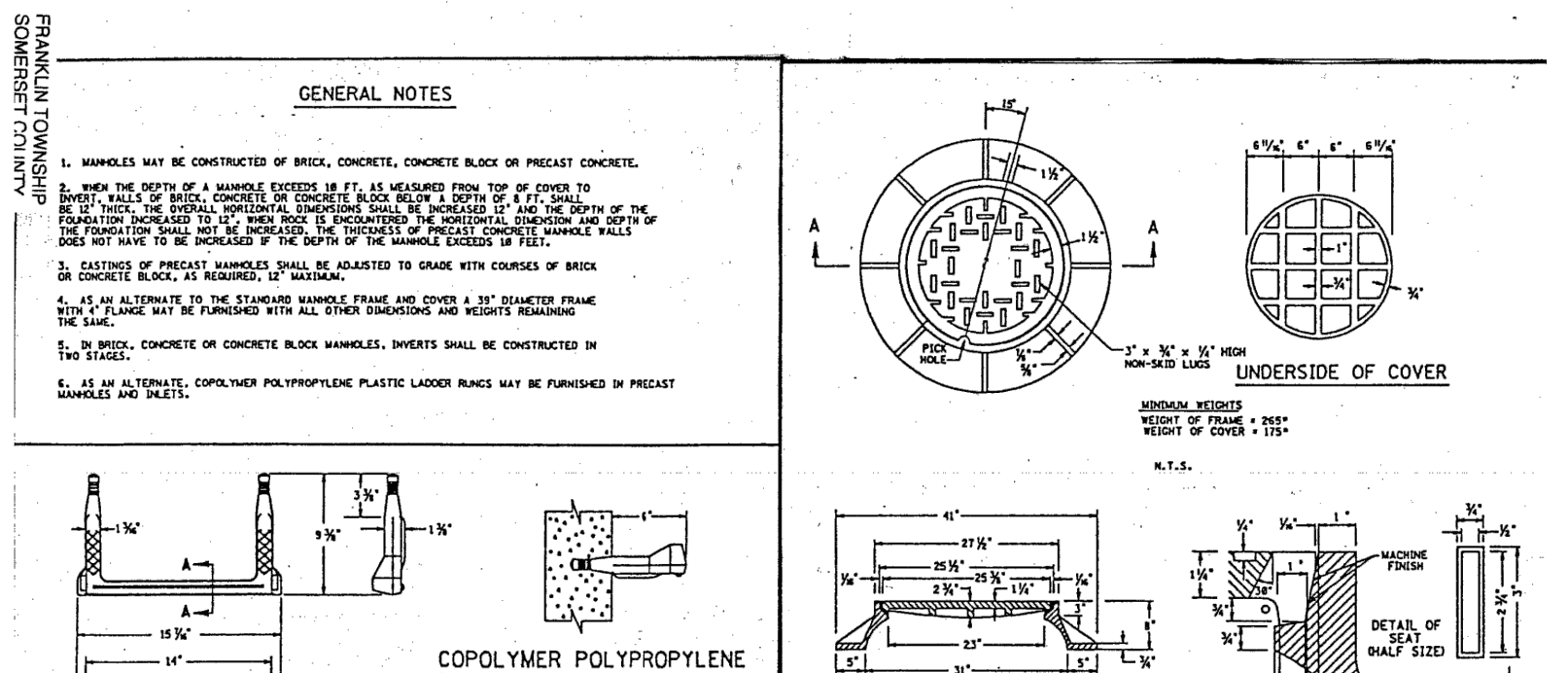
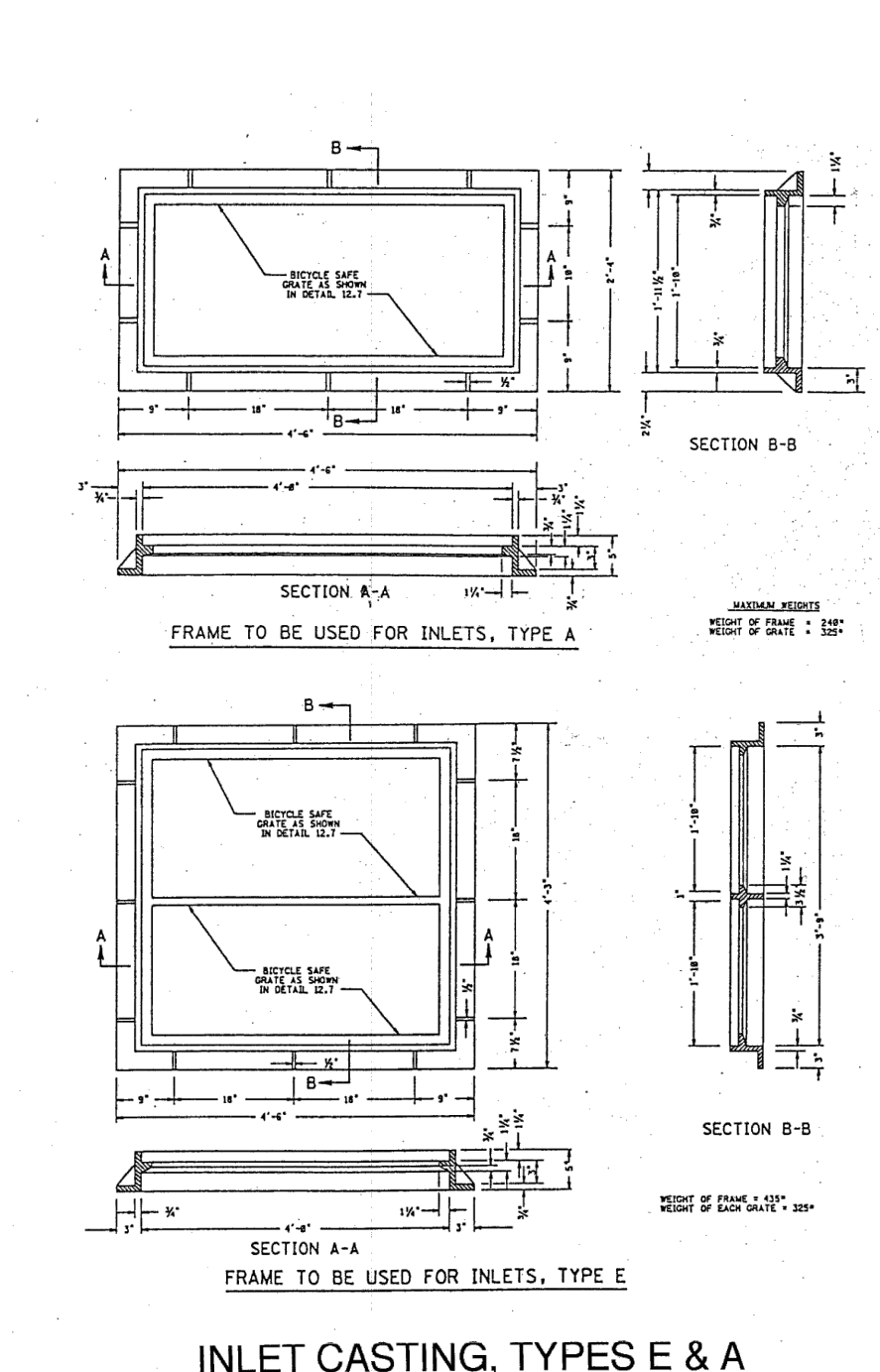
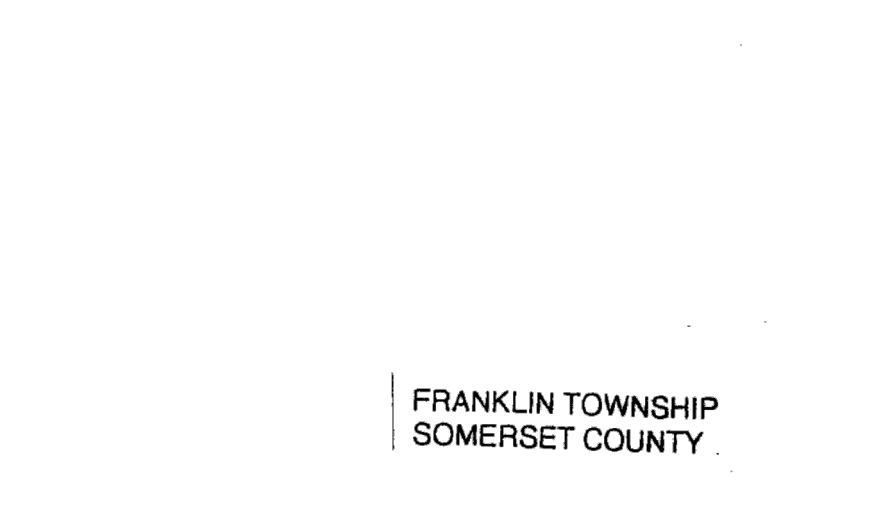
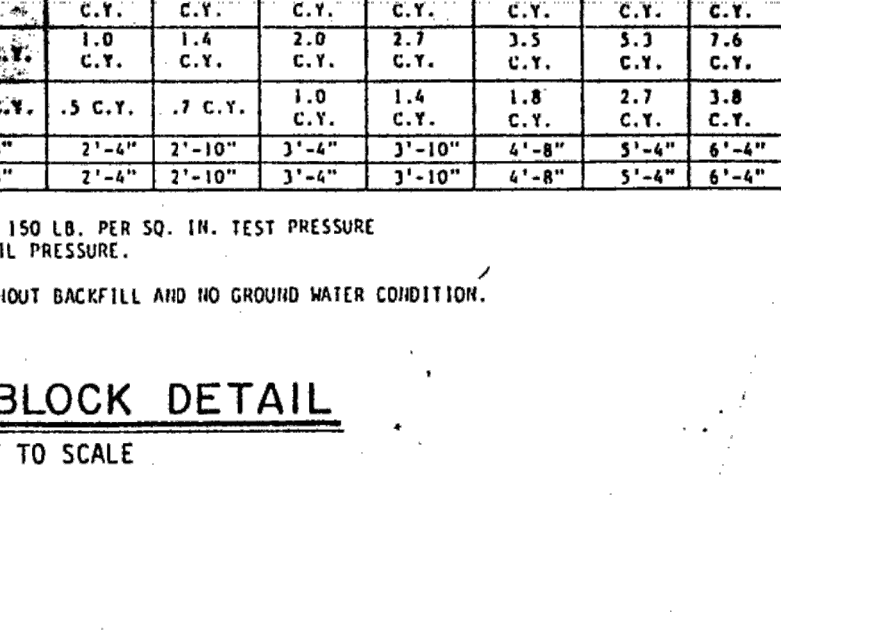
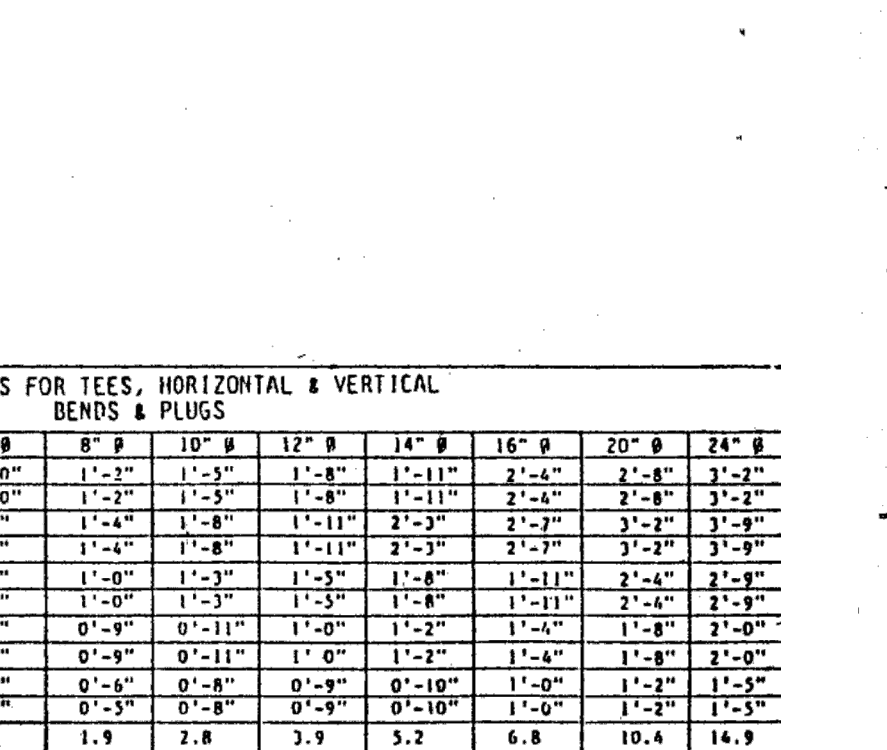
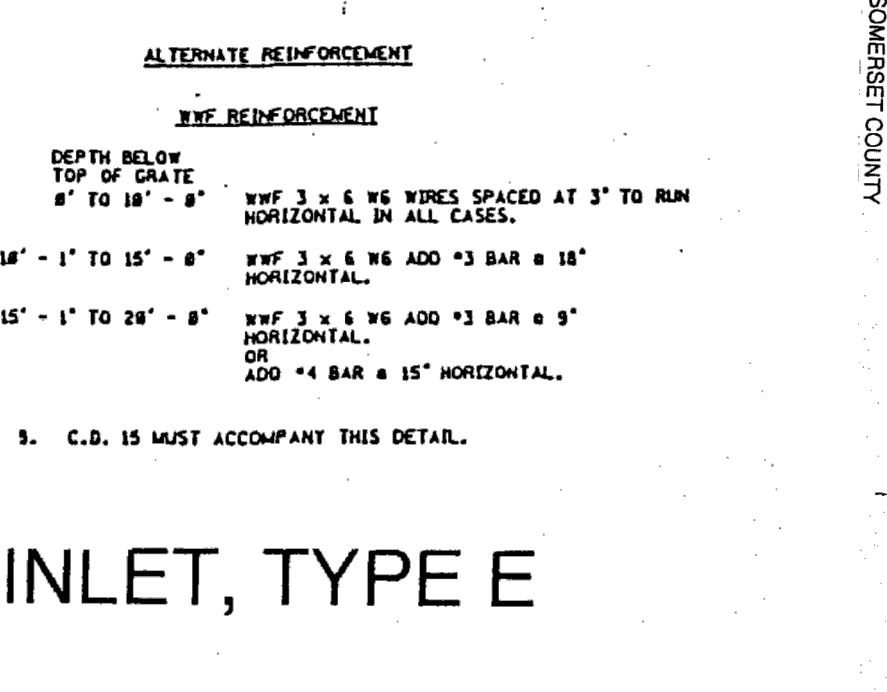
Service	Material	Jointing	Lining	Manufacturer	Standard
Sanitary	Ductile Iron Class 52	Mechanical Joints with gaskets or approved equal	Concrete Lined	U.S. Pipe Co. or approved equal	AWWA C151 ANSIA21.51
Gas	Ductile Iron	Mechanical joints with retaining gaskets	Typical epoxy coating	U.S. Pipe Co. or approved equal	AWWA C159
Yards	Cast Iron	Mechanical joints with retaining gaskets	5" flat	U.S. Pipe Co. or approved equal	
Mechanical	Ductile Iron Class 52	Mechanical Joints with retaining gaskets	Concrete Lined	U.S. Pipe Co. or approved equal	AWWA C111 ANSIA21.11
Retaining	Ductile Iron	Mechanical Joints		U.S. Pipe Co. or approved equal	AWWA C111
Castings	Ductile Iron			U.S. Pipe Co. or approved equal	ASTM A536
Followers	Ductile Iron			U.S. Pipe Co. or approved equal	ASTM A536
Gaskets	Compounded Rubber			U.S. Pipe Co. or approved equal	ASTM E2000
Boils/Nuts	High strength Low alloy Steel			U.S. Pipe Co. or approved equal	AWWA C111
Service Line	Copper	Compression	N/A		
Carriers	Brass	Threaded or soldered	N/A	Muller No.	
Clack	Brass or copper	Threaded or soldered	N/A	Muller or approved equal	
Interior	Brass or copper	Threaded or soldered	N/A	Muller or approved equal	
And smaller	type L				

**GENERAL NOTES:**

- INLETS MAY BE CONSTRUCTED OF BRICK, CONCRETE BLOCK OR PRECAST CONCRETE. WALLS SHALL BE 8" THICK UNLESS OTHERWISE SPECIFIED. PRECAST CONCRETE INLETS SHALL BE CLASS C.
- CONCRETE OF INLET WALLS WILL BE PERMITTED AT THE RATE OF PER 8" OF HEIGHT MAXIMUM FOR 18".
- EXCEPT FOR INLETS TYPE A AND C, FOUNDATIONS AND THE BOTTOM OF THE FOOTINGS SHALL BE 8" BELOW THE OUTER WALL OF THE LOWEST PIPE IN THE INLET.
- WHEN THE DEPTH OF AN INLET THAT IS NOT PRECAST EXCEEDS 24" MEASURED FROM TOP OF GRADE TO INVERT, THE DEPTH OF FOUNDATION INCREASES TO 12" WHEN ROCK IS ENCOUNTERED. DEPTH OF FOUNDATION SHALL NOT BE INCREASED.
- INLETS FOUNDATIONS WHICH ARE PRECAST SHALL BE SET ON A 4" THICK BED OF COMPACTED GRANULAR FILL WITH A MINIMUM OF 12" OF GRANULAR FILL ON EACH SIDE OF THE FOUNDATION. THE DEPTH OF FOUNDATION SHALL NOT BE INCREASED.
- CASTINGS FOR PRECAST INLETS SHALL BE SET TO GRADE WITH COURSES OF BRICK, AS REQUIRED, 18" MAXIMUM.
- WHEN THE DEPTH OF AN INLET EXCEEDS 18" AS MEASURED FROM TOP OF GRADE TO INVERT, THE FOUNDATION SHALL BE INCREASED TO 12" WHEN ROCK IS ENCOUNTERED. DEPTH OF FOUNDATION SHALL NOT BE INCREASED.
- MINIMUM WALL REINFORCEMENT FOR PRECAST INLETS TYPE A, B, C, E1 AND E2 ARE AS SHOWN.

**BAR REINFORCEMENT**

DEPTH BELOW TOP OF GRADE	HORIZONTAL	VERTICAL	WALL THICKNESS
0' - 4"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
4" - 8"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
8" - 12"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
12" - 18"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
18" - 24"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
24" - 30"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
30" - 36"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
36" - 42"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
42" - 48"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
48" - 54"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
54" - 60"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
60" - 66"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
66" - 72"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
72" - 78"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
78" - 84"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
84" - 90"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
90" - 96"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
96" - 102"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
102" - 108"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
108" - 114"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.
114" - 120"	#4 @ 12" C.C.	#4 @ 12" C.C.	4" MIN.



**RESTORATION OF STREET OPENINGS**  
N.T.S.

**FRANKLIN TOWNSHIP SOMERSET COUNTY**

**TEMPORARY REPAIR DETAIL**  
**PERMANENT REPAIR DETAIL**

**SCHEDULE:**

SCHEDULE	MINIMUM LENGTH OF RESTRAINED JOINTS ON EACH SIDE OF FITTING	DUCTILE IRON PIPE (FT.)	CONCRETE LCP (FT.)
90° BEND, VALVES, CAPS AND PLUGS	NA	90	230
45° BENDS	NA	30	80
22 1/2° BENDS	NA	10	25
11 1/4° BENDS	NA	5	5
5 5/8° BENDS	NA	NA	5
TEES	6'-8"	8'-0"	12'-0"

**RESTRAINING LENGTH SCHEDULE**

MINIMUM LENGTH OF RESTRAINED JOINTS ON EACH SIDE OF FITTING	DUCTILE IRON PIPE (FT.)	CONCRETE LCP (FT.)
90° BEND, VALVES, CAPS AND PLUGS	90	230
45° BENDS	30	80
22 1/2° BENDS	10	25
11 1/4° BENDS	5	5
5 5/8° BENDS	NA	5
TEES	6'-8"	8'-0"

**FRANKLIN TOWNSHIP CONSTRUCTION DETAILS**

**DYNAMIC ENGINEERING**

**FRANKLIN TOWNSHIP CONSTRUCTION DETAILS**

**PROJECT: HARBOR GROUP PROPOSED WAREHOUSE & SITE IMPROVEMENTS**

**KYLE C. KAVINSKI**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. 52985

**JOSHUA M. SEWALD**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. 52908

**17**

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