

RESOLUTION NO. 2016-11

**BRIGHTON TOWNSHIP
BEAVER COUNTY, PENNSYLVANIA**

**A RESOLUTION TO ADOPT MINIMUM CONSTRUCTION
STANDARDS AND DETAILS WITHIN BRIGHTON TOWNSHIP**

WHEREAS, the Board of Supervisors desires to establish standards, specifications and details for construction and maintenance of infrastructure improvements within Brighton Township; and

WHEREAS, Brighton Township desires to compile the standards, specifications and details into a comprehensive manual; and

WHEREAS, the Brighton Township Planning Commission at their meeting of March 7, 2016 has recommended for adoption the Township of Brighton Minimum Construction Standards and Details.

NOW, THEREFORE, BE IT RESOLVED, by the Supervisors of Brighton Township, Beaver County, Pennsylvania that they hereby adopt the Township of Brighton Minimum Construction Standards and Details, a copy of which is attached hereto; and

BE IT FURTHER RESOLVED that the Township of Brighton Minimum Construction Standards and Details may be revised and updated from time to time by Resolution of the Brighton Township Board of Supervisors.

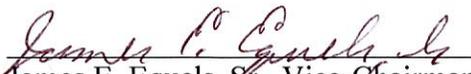
RESOLVED AND ADOPTED by the Board of Supervisors of Brighton Township, Beaver County, Pennsylvania, in public meeting this 11th day of April, 2016.

ATTEST:

BRIGHTON TOWNSHIP
BOARD OF SUPERVISORS


Bryan K. Dehart, Secretary


John Curtaccio, Chairman


James E. Equels, Sr., Vice-Chairman


Mark Piccirilli, Supervisor



TOWNSHIP OF BRIGHTON

Minimum Construction Standards and Details

April 2016

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I. GENERAL REQUIREMENTS

A. CONTACTS

Township Manager

Mr. Bryan K. Dehart
1300 Brighton Road
Beaver, Pennsylvania 15009
724-774-4800
412-774-3565 (Fax)

Township Engineer

Mr. Ned Mitrovich, P.E., Principal
Lennon, Smith, Souleret Engineering, Inc.
846 Fourth Avenue
Coraopolis, Pennsylvania 15108-1522
412-264-4400 / 412-264-1200 (Fax)

Township Solicitor

Harold F. Reed, Jr., Esquire
Reed, Luce, Tosh, Wolford & Douglass
999 Third Street
Beaver, Pennsylvania 15009
724-774-9220 / 724-774-2411 (Fax)

B. PERMITS AND EASEMENTS OBTAINED BY DEVELOPER / CONTRACTOR

1. Prepare and submit to the proper authority, utility or State agency all information required for the issuance of required permits or easements. Pay all costs thereof including agency inspections and easement costs unless specifically provided otherwise in the Project. Comply with all terms and conditions and permit requirements contained in such permits.
2. Provide a copy of each permit to the Township prior to pursuing any work covered by the permit.
3. When required by the permit and during work progress covered by the permit, the work shall be inspected by the issuing agency.
4. Provide a copy of the completed permit with the issuing agency acceptance or easement owner release.

5. Permits and easements, including those obtained by the Developer and/or Contractor, must be posted at the site of the work on the Project Notification Board. This Board to contain copy of all permits, emergency contact information, Owner of the development and other state and local review employee posters.
6. Developer Obtained Permits:
 - a. Environmental Permits: All permits to be obtained by the Developer. These permits generally include:
 - i. General Permits ó Pennsylvania Department of Environmental Protection (PaDEP)
 - ii. Joint Permits or Small Projects Permits ó PaDEP
 - iii. Erosion and Sedimentation Control Plan ó Beaver County Conservation District (BCCD) approval, under one acre of disturbance (for all disturbance in excess of 5,000 square feet, an adequacy letter is required)
 - iv. NPDES Permit ó PaDEP (over 1 acre)
 - v. Part II Permit
 - vi. Sewage Planning Module
7. Utility Easements: The Developer/Contractor is responsible for the acquisition of any and all easements for utility extensions that will service the subject site. Easement must be a minimum of 20' width for permanent with an additional 15' on each side of the permanent easement for construction and maintenance of facilities.

C. SUBMITTALS

1. Procedural requirements for submittals required for performance of the Work, including;
 - a. Contractor's construction schedule for entire project by major item of work (i.e. erosion and sedimentation, stormwater, sanitary, water, gas, electric, roadway and final restoration).
 - b. Submittal schedule.

- c. Daily construction reports.
 - d. Shop Drawings.
2. Submittal Preparation: Submit six (6) copies. Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
- a. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 - b. Include the following information on the label for processing and recording action taken.
 - i. Project name, Contract Number and Name, Owners Name and address.
 - ii. Date.
 - iii. Name and address of Developer's Engineer.
 - iv. Name and address of Contractor.
 - v. Name and address of subcontractor.
 - vi. Name and address of supplier.
 - vii. Name of manufacturer.
 - viii. Number and title of appropriate Specification Section.
 - ix. Drawing number and detail references, as appropriate.
3. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Engineer using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.

On the transmittal Record relevant information and requests for data. On the form, or separate sheet, record deviations from approved plan and document requirements, including minor variations and limitations. Include Contractor's certification that information complies with approved documents.

4. Contractor shall review and approve each submittal before forwarding the submittal to the Engineer. Contractor shall Stamp, date and initial as reviewed and approved each submittal before forwarding to Engineer.
5. Submit a fully developed Construction Schedule. The schedule to indicate the coordinated work of all Contractors. Additionally, provide 48 hour notice to the Township and the Township Engineer of construction activities requiring Brighton Township observation.

D. INSPECTION AND TESTING 6 GENERAL REQUIREMENTS

1. Inspections and Testing

- a. The Developer / Contractor must hire a third party testing / quality control firm to conduct monitoring and testing for earthwork compaction, asphalt, cast-in-place concrete, grout, and other independent monitoring as required or as requested by the Township or Township Engineer. Testing, as defined in this paragraph and inspection will be paid by the Contractor / Developer.
- b. The Developer / Contractor to provide all labor, equipment and apparatus necessary for in-place testing to mainlines, and manholes as described in the Technical Specifications.
- c. Retesting and reinspection required because of defective work will also be completed by a third party consultant paid by the Developer / Contractor.

2. Submittals

- a. Third party independent consultant must be submitted to Township for approval.
- b. Developer / Contractor to submit two copies of all test reports to the Project Representative.

3. Developer's Responsibilities

- a. Provide to the independent representative samples of materials to be tested in the required quantities.
- b. Furnish labor, equipment, and facilities:

- i. For access to work to be tested.
 - ii. To obtain and handle test samples at the site.
 - iii. To facilitate inspections and tests including traffic control and safety systems.
 - iv. For laboratory's exclusive use for storage and curing test samples until removed to the laboratory.
 - v. To repair any test areas in order to match original conditions.
 - vi. For all testing and inspection in supplier's facilities.
- c. Items of work not meeting the as approved requirements must be removed and replaced.

E. GUARANTEES

1. Determination of Guarantee Dates

- a. The guarantee date(s) shall be established prior to Final Acceptance.

2. Documentation

- a. Guarantee dates and the durations of the guarantee period shall be recorded and submitted to the Township in a form acceptable to the Township Solicitor.
- b. The guarantee information shall be documented by Specification section in the same order as presented in the operations and maintenance manuals.
- c. Vendor information including point-of-contact, company name, company address, and company emergency phone number shall be included for applicable equipment and components of the facility.

3. Guarantee Response

- a. The Developer's Representative shall be the point-of-contact for response to guarantee-related issues during the two year guarantee period.
- b. For special guarantees extending beyond the two year guarantee period.
- c. Guarantee items requiring response within the two year guarantee period, will have a completely new two year guarantee period established from the time of repair. Upon completion of the repair, provide written verification of the newly established guarantee period to the Developer/Contractor Representative.

F. RECORD DRAWINGS 6 AUTOCAD FORMAT

1. Submittals

- a. One neatly and legibly marked set of full-size record drawings.
- b. As-Built CAD drawings. Electronic format shall be AutoCAD 2010 or newer.

2. General

- a. The record drawing set shall be kept separate from other construction drawings and shall not be used for other purposes.
- b. Use waterproof red felt-tip pens to make fully dimensional changes on the drawings. Notations are to be neat, legible, clear and concise. Show changed dimensions by striking through the planned dimension with a single line and by placing the new value within a circle.
- c. Show the actual as-built location along with all changes made during construction within AutoCAD Plans.

3. Drawing Requirements

- a. Provide additional drawings or mark on the Drawings to show the following:
 - i. Underground utilities and other items including the location of lines and appurtenances. Show the actual size and types of material used. Show locations by facility coordinates or

dimensioned to permanent surface structures. Minimum requirements for accuracy as specified in the following table:

Description	Location	Elevation	Notes
Temporary Facilities and Construction Materials left at end of Project	CL ± 1 ft	CL ±1 ft	Includes shoring, all underground items, and concrete.
Pressurized piping.	CL ± 1 ft	CL ±0.50 ft	Includes water and process lines.
Storm drains, sewer lines inverts and cleanouts.	CL ± 1 ft	CL ±0.01 ft	Recalculate slope if shown on the Drawings.
Sewer interceptors and trunks.	Coordinates, stations, and offsets. CL ± 1 ft.	IE ±0.01 ft.	Recalculate actual slopes.
Laterals and Side Sewers	CL ± 1 ft	CL ±0.50 ft	Include measurements based on fixed objects (i.e. house corners)
Stormwater Cross Connection	CL ± 1 ft	CL ±0.50 ft	Include measurements based on fixed objects (i.e. house corners)

CL = Centerline
 IE = Invert Elevation
 FT = Feet

- ii. The actual arrangement and routing of embedded conduit and piping is relative to its location and proportion to other work. The location does not need to be dimensioned or drawn to scale.
- iii. Other Drawings as may be required by the Township or the Township Engineer.
- iv. Provide dimensions from more than one permanent structure where required for accurate location.

4. CAD Drawings

- a. All construction plans must be submitted in electronic format compatible to AutoCAD 2010.
- b. Record drawings will be reviewed and accepted prior to acceptance of work.
- c. Record Drawings and Schedules. Following Substantial Completion but prior to Final Acceptance of the work, provide D-size (24 inches high by 36 inches long) sepia reproducible prints. Prints shall reflect the final constructed state of the systems. The *.DWG or *.DGN files, if used by the Developer/Contractor, shall be completely brought up to date to show the systems as-installed. The *.DWG or *.DGN files shall be turned over to the Project Representative on CD-R format.

II. ROADWAY AND STORM SEWER REQUIREMENTS**A. Project Completion Checklist for Roadways and Storm Sewers**

1. Submit 110% cost of construction Performance Bond, 10% cost of construction Escrow Deposit and a Certificate of Insurance with the Township of Brighton as additional insured.
2. Installation of storm sewers and roadways per the approved plans and per Brighton Township Regulations.
3. Complete and submit Record Drawings (As-Builts) of storm sewers and roadways for review and approval by Brighton Township. Record Drawings must be accepted prior to Performance Bond being released. All rights-of-way must be recorded and conveyed to Brighton Township prior to release of Performance Bond.
4. After the storm sewer line has been installed for 30 days, testing will need completed per Brighton Township Regulations. Tests shall include:
 - i. Mandrel (Deflection) Test of the entire sewer line
5. Submit Maintenance Bond for 18 months from the date of the Township's acceptance of storm sewers and roads for an amount of 15% the cost of construction.
6. At month 16 of the Maintenance Bond period, CCTV all storm sewer lines and submit videos and data to the Township for review.
7. Escrow Deposit shall remain in place until the expiration date as set forth in any agreements entered into between the Township of Brighton and the Developer or unless otherwise agreed to by the Township of Brighton, but at a minimum until the 18-month Maintenance Bond expires.

B. ROADWAY CONSTRUCTION REQUIREMENTS

1. Contact all utility companies prior to start of work to schedule and coordinate line relocations, adjustments to utility structures, and all other work to be completed by utility companies, incidental to construction.
2. All valve boxes, manholes, and hand holes not adjusted by utility companies are to be adjusted as directed by the Township Engineer prior to dedication of facilities. Provide all utility companies with detailed schedule, height and number of adjustments incidental to the wearing

- course item. Update schedule and provide to all utility companies bi-weekly schedule, incidental to construction.
3. Provide temporary ramps (cold patch or hot mix asphalt only ó no millings) to all resident and business driveways, and around structures (inlet, manholes, valve boxes a minimum of 3 feet in all directions), incidental to construction.
 4. Remove and dispose of existing inlet grate, frame, and box where inlets are to be replaced. Install new structure and connect all existing pipes where noted. Provide all necessary pipe fittings and/or adapters to provide a complete watertight connection. Backfill excavated area with PennDOT 2A stone. This work is incidental to the new structure item.
 5. For piping connections to existing structure including pavement base drain, core drill hole for new outlet. Air hammering is not permitted. Reparge, add brick, relay all loose brick incidental to pipe item. Field verify condition of existing structures prior to construction.
 6. Maintain/replace existing monuments.
 7. Adjust all manholes, valve boxes, curb boxes and inlets to match finished roadway surface grade prior to installing final wearing course.
 8. Connect outlet pavement base drains to each catch basin which the underdrain passes, including providing hole through catch basin wall, all parging, etc.
 9. Field verify location and elevation(s) of existing storm sewer pipes.
 10. Reparge all inlets and/or repair all inverts in all existing inlets on project roadways including replacing all underdrain connections with couplers on inside and outside of box.
 11. When excavating a trench for placement of pipe, conduit, inlets, manholes and other appurtenances associated with pipe or conduit construction and full depth curb, the Developer understands that the work is parallel or in close proximity to building foundations and other utilities including but not limited to overhead lines and supporting poles, gas lines, waterlines, sanitary sewers, buried cable, etc. The Developer must take the necessary precautions to protect and support those utilities or foundations to prevent movement, damage and to maintain service.

12. The Developer shall notify utility companies or building foundation owner(s) of the proximity of the trench excavation to the utilities or foundation and is responsible to ensure that the work will not affect the structural integrity of the utility or building foundation.

C. STORM SEWER INSTALLATION REQUIREMENTS

1. Verify all existing utilities in the field prior to start of excavation work. Comply with One Call (Act 38) requirements. Contact all utility companies that may have facilities within the work area.
2. Field check and verify benchmark elevations for all work before start of construction. Set/adjust final grades for proposed storm sewer lines after all existing utilities and other obstructions have been located by test holes. Dig all necessary test holes to locate any existing utilities that may be in conflict with the alignment and grade of the proposed storm sewer. Meet all existing conditions and grades along the route of the proposed sewer lines.
3. Maintain and protect traffic during construction. Coordinate all work with local emergency response and transportation agencies. Provide all required signage for temporary traffic control. Maintain all roads, sidewalks, steps and traveled ways clean, free of mud or dust, and in a condition usable by residents in the area during construction. Maintain access to all driveways during construction.
4. Maintain all existing storm sewers and sanitary sewers in service during construction. Contain sanitary sewage to sanitary sewers. Do not discharge to the ground surface or to groundwaters.
5. Confine all activity to authorized rights-of-way. When in doubt about right-of-way limits, verify with Owner.
6. Implement and maintain an Erosion and Sedimentation Control Plan as required by Chapter 102.
7. Restore all private property disturbed by construction activities within two weeks of construction work.
8. Maintain daily as-built record information including wye stationing. Give Township's Representative copies of all delivery slips for all materials delivered to the project.

9. Coordinate and schedule all work as required with utility companies, other contractors, and local, municipal or state government agencies. Notify Township and Township Engineer 48 hours in advance of starting the project.
10. Pipeline acceptance testing shall include mandrel and full moon spot light.
11. Protect public at all times from all open excavation, cover all open excavation with suitable steel plates at the end of each workday.
12. All pipe shall be corrugated polyethylene culvert pipe (CPP) smooth lined with watertight locking joints or reinforced concrete pipe (RCP) as approved.
13. Trench backfill requirements:

Pipe Zone:

CPP or RCP pipe full #57 or PennDOT 2A stone bedding (no slag)

Intermediate Zone:

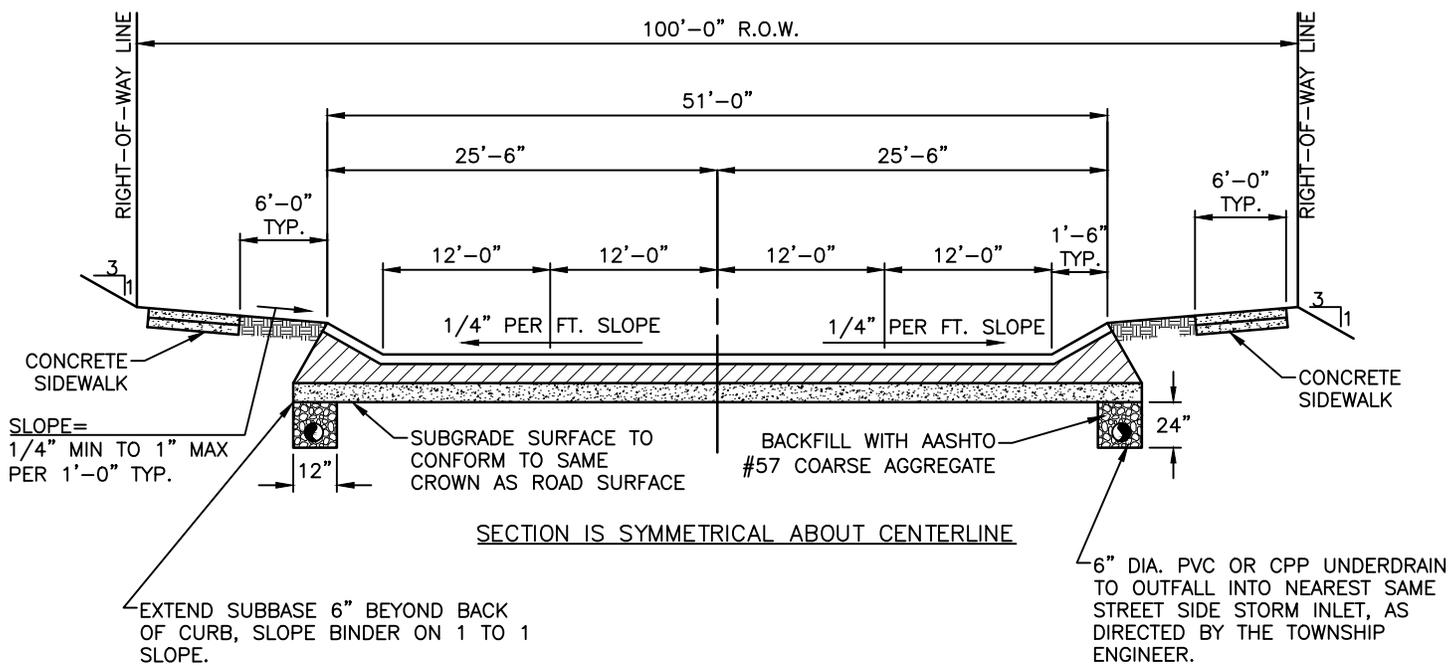
Improved areas full trench stone vibratory compact in 4" lifts (no slag),
#57 or PennDOT 2A with trench plugs

Unimproved areas select backfill vibratory compact in 4" lifts.

Final Zone: As specified.

14. All storm sewer precast materials (i.e. manholes, inlets, endwalls, etc.), and inlet or manhole frames, lids, grates, and pipe must come from supplier listed in Bulletin 15.

D. ROADWAY AND STORM SEWER DETAILS (SEE FOLLOWING PAGES)



PAVEMENT SECTION CONSISTS OF THE FOLLOWING:

- GEOTEXTILE CLOTH - PENNDOT CLASS 4 (6 OUNCE MIN)
- 12" - PENNDOT 2A AGGREGATE LIMESTONE BASE COURSE OR 10" AASHTO #1 AND 2" OF PADOT #2A. (NO SLAG)
- 6" HMA BINDER COURSE
- 1" HMA BITUMINOUS WEARING COURSE, SRL-H-INITIAL
- 1 1/2" HMA BITUMINOUS WEARING COURSE, SRL-H-FINAL

NOTES:

1. ALL DEPTHS INDICATED ARE AFTER COMPACTION.
2. BITUMINOUS WEDGE CURBS SHALL BE 18" WIDE x 4" HIGH. ALTERNATE CURB SPEC (PLAIN CONCRETE CURB GUTTER OR PLAIN CONCRETE CURB IN ACCORDANCE WITH PENNDOT PUBLICATION 408).
3. PREPARATION FOR AND INSTALLATION OF THE FINAL 1 1/2" OF WEARING SURFACE, INCLUDING ALL REPAIRS TO PAVEMENT SECTION REQUIRED BY THE TOWNSHIP, SHALL BE INSTALLED AFTER 90% OF THE DWELLINGS ARE COMPLETED AND CONSTRUCTION EQUIPMENT IS NOT USING THE ROADWAY IN CONFORMANCE WITH THE DEVELOPER'S AGREEMENT. THIS WORK ALSO INCLUDES BITUMINOUS LEVELING COURSE TO PROVIDE SMOOTH SURFACE FOR FINAL WEARING SURFACE TO BE INSTALLED. ALL MANHOLE LIDS, GRATES, VALVES SHALL BE ADJUSTED TO GRADE PRIOR TO INSTALLATION OF FINAL 1 1/2" WEARING COURSE.
4. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408. ALL CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH BULLETIN 15 AND THE STANDARDS SET FORTH IN PENNDOT PUBLICATIONS 70, 72M, AND 408.
5. LOCATION AND INSTALLATION OF ALL STREET SIGNS (STREET IDENTIFICATION, STOP, SPEED LIMIT, ETC.) SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD REQUIREMENTS AND AS DIRECTED BY THE TOWNSHIP. DEVELOPER TO PROVIDE A SIGNAGE PLAN FOR REVIEW AND APPROVAL OF TOWNSHIP.
6. SIDEWALK, CROSSWALK, AND CURB RAMP INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN.
7. DEVELOPER'S TRAFFIC ENGINEER TO PROVIDE TRAFFIC COUNTS AND ESALS FOR MIX DESIGN WITH SHOP DRAWING SUBMITTAL.

RD-01

Arterial And Industrial Street

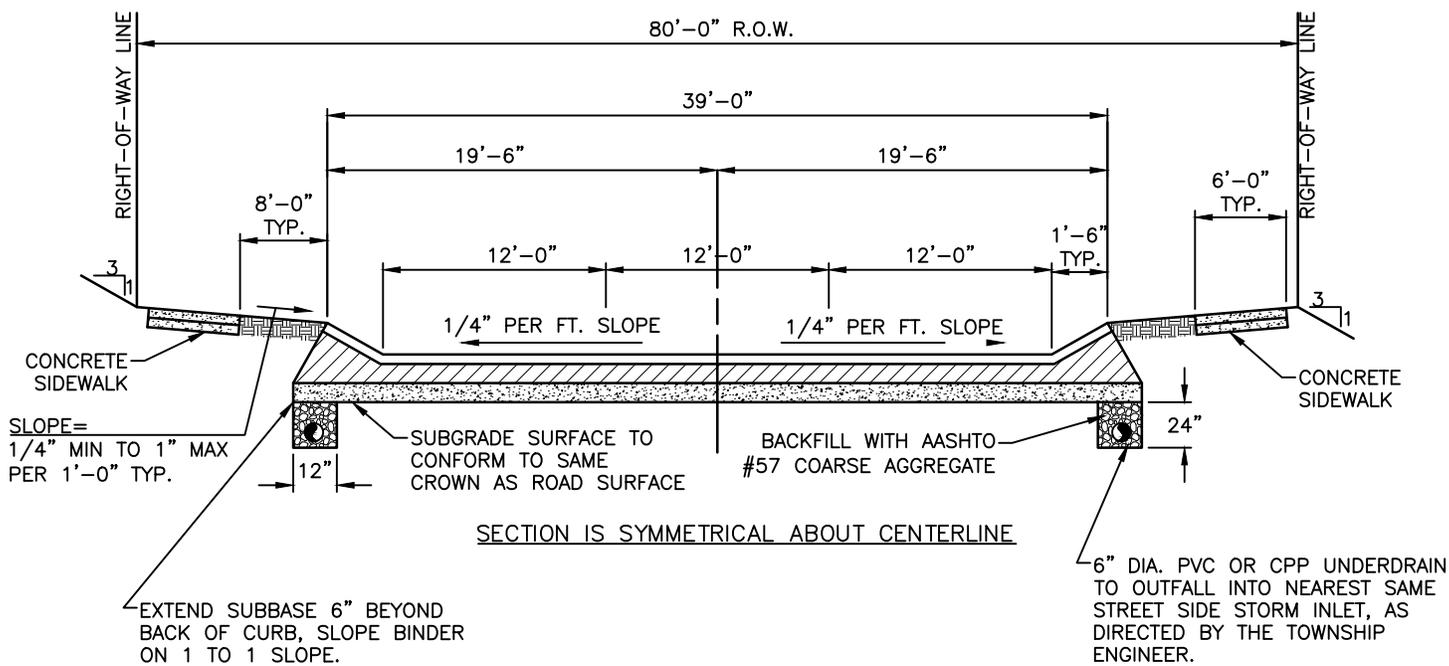
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DATE: April 2016 FILE: RD-01 Arterial And Industrial Street.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009

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PAVEMENT SECTION CONSISTS OF THE FOLLOWING:

- GEOTEXTILE CLOTH – PENNDOT CLASS 4 (6 OUNCE MIN)
- 10" – PENNDOT 2A AGGREGATE LIMESTONE BASE COURSE
8" AASHTO #1 AND 2" OF PENNDOT #2A (NO SLAG)
- 5" HMA BINDER COURSE
- 1" HMA BITUMINOUS WEARING COURSE, SRL-H-INITIAL
- 1½" HMA BITUMINOUS WEARING COURSE, SRL-H-FINAL

NOTES:

1. ALL DEPTHS INDICATED ARE AFTER COMPACTION.
2. BITUMINOUS WEDGE CURBS SHALL BE 18" WIDE x 4" HIGH.
3. PREPARATION FOR AND INSTALLATION OF THE FINAL 1½" OF WEARING SURFACE, INCLUDING ALL REPAIRS TO PAVEMENT SECTION REQUIRED BY THE TOWNSHIP, SHALL BE INSTALLED AFTER 90% OF THE DWELLINGS ARE COMPLETED AND CONSTRUCTION EQUIPMENT IS NOT USING THE ROADWAY IN CONFORMANCE WITH THE DEVELOPER'S AGREEMENT. THIS WORK ALSO INCLUDES BITUMINOUS LEVELING COURSE TO PROVIDE SMOOTH SURFACE FOR FINAL WEARING SURFACE TO BE INSTALLED. ALL MANHOLE LIDS, GRATES, VALVES SHALL BE ADJUSTED TO GRADE PRIOR TO INSTALLATION OF FINAL 1 ½" WEARING COURSE.
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7. DEVELOPER'S TRAFFIC ENGINEER TO PROVIDE TRAFFIC COUNTS AND ESALs FOR MIX DESIGN WITH SHOP DRAWING SUBMITTAL.

RD-02

Commercial Collector Street

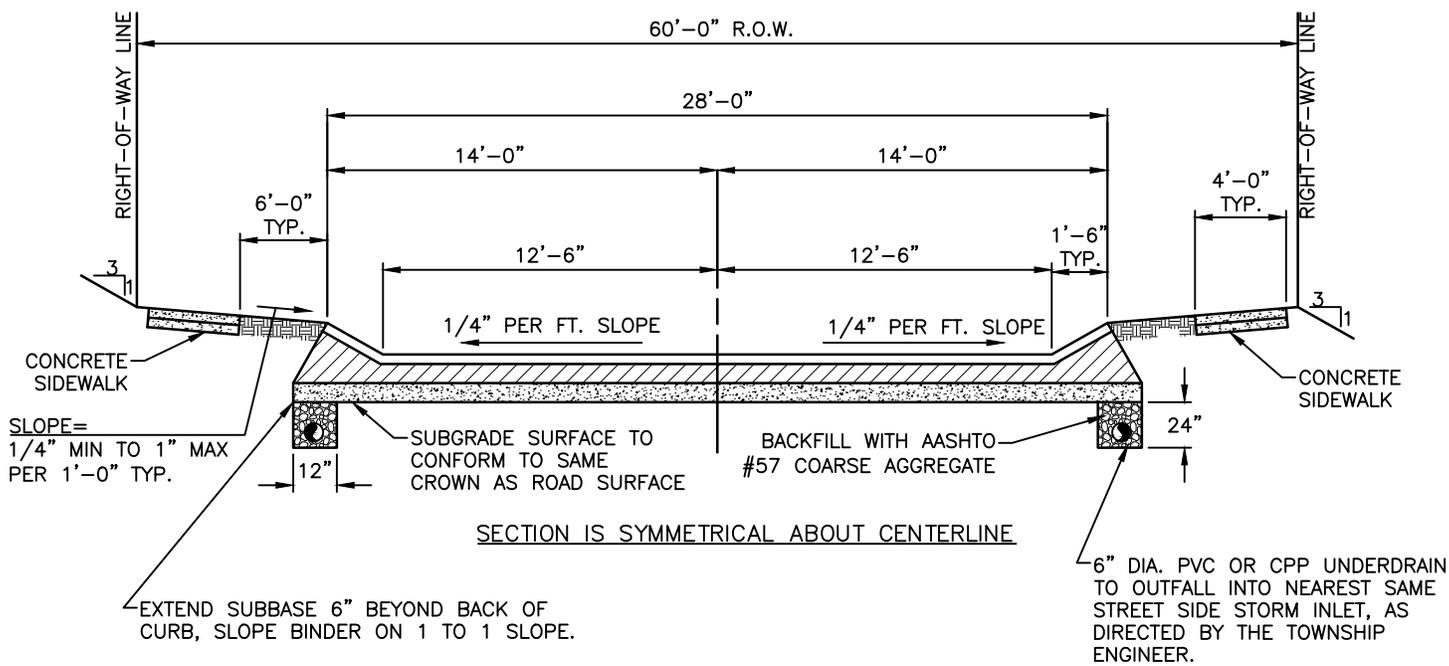
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DATE: April 2016 FILE: RD-02 Commercial Collector Street.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009

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- 1½" HMA BITUMINOUS WEARING COURSE, SRL-H-FINAL

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1. ALL DEPTHS INDICATED ARE AFTER COMPACTION
2. BITUMINOUS WEDGE CURBS SHALL BE 18" WIDE x 4" HIGH
3. PREPARATION FOR AND INSTALLATION OF THE FINAL 1½" OF WEARING SURFACE, INCLUDING ALL REPAIRS TO PAVEMENT SECTION REQUIRED BY THE TOWNSHIP, SHALL BE INSTALLED AFTER 90% OF THE DWELLINGS ARE COMPLETED AND CONSTRUCTION EQUIPMENT IS NOT USING THE ROADWAY IN CONFORMANCE WITH THE DEVELOPER'S AGREEMENT. THIS WORK ALSO INCLUDES BITUMINOUS LEVELING COURSE TO PROVIDE SMOOTH SURFACE FOR FINAL WEARING SURFACE TO BE INSTALLED. ALL MANHOLE LIDS, GRATES, VALVES SHALL BE ADJUSTED TO GRADE PRIOR TO INSTALLATION OF FINAL 1 ½" WEARING COURSE.
4. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408. ALL CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH BULLETIN 15 AND THE STANDARDS SET FORTH IN PENNDOT PUBLICATIONS 70, 72M, AND 408.
5. LOCATION AND INSTALLATION OF ALL STREET SIGNS (STREET IDENTIFICATION, STOP, SPEED LIMIT, ETC.) SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD REQUIREMENTS AND AS DIRECTED BY THE TOWNSHIP. DEVELOPER TO PROVIDE A SIGNAGE PLAN FOR REVIEW AND APPROVAL OF TOWNSHIP.
6. SIDEWALK, CROSSWALK, AND CURB RAMP INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN.
7. DEVELOPER'S TRAFFIC ENGINEER TO PROVIDE TRAFFIC COUNTS AND ESALs FOR MIX DESIGN WITH SHOP DRAWING SUBMITTAL.

RD-04

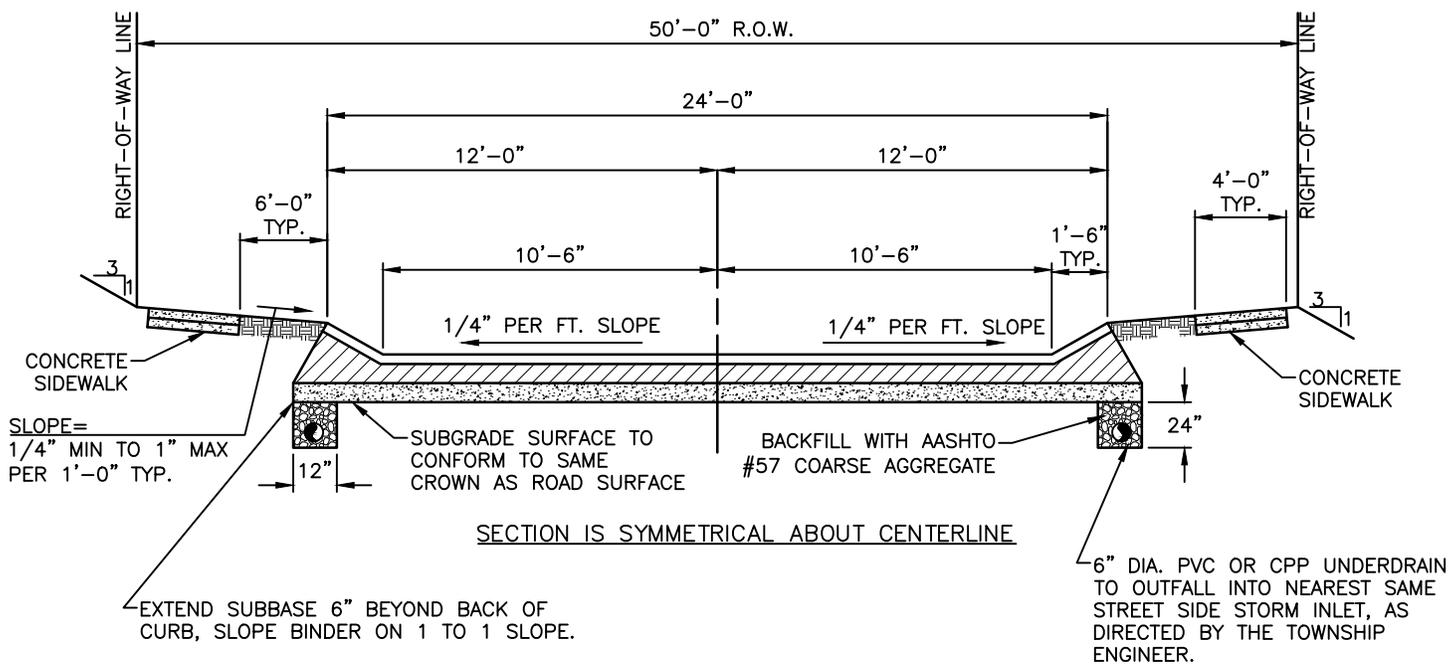
Local Commercial Street

SCALE: N.T.S.

DATE: April 2016 FILE: RD-04 Local Commercial Street.dwg



Brighton Township
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PAVEMENT SECTION CONSISTS OF THE FOLLOWING:

- GEOTEXTILE CLOTH – PENNDOT CLASS 4 (6 OUNCE MIN)
- 8" – PENNDOT 2A AGGREGATE LIMESTONE BASE COURSE OR 8" AASHTO #1 AND 2" OF PENNDOT #2A (NO SLAG)
- 3" HMA BINDER COURSE
- 1" HMA BITUMINOUS WEARING COURSE, SRL-H-INITIAL
- 1½" HMA BITUMINOUS WEARING COURSE, SRL-H-FINAL

NOTES:

1. ALL DEPTHS INDICATED ARE AFTER COMPACTION.
2. BITUMINOUS WEDGE CURBS SHALL BE 18" WIDE x 4" HIGH
3. PREPARATION FOR AND INSTALLATION OF THE FINAL 1½" OF WEARING SURFACE, INCLUDING ALL REPAIRS TO PAVEMENT SECTION REQUIRED BY THE TOWNSHIP, SHALL BE INSTALLED AFTER 90% OF THE DWELLINGS ARE COMPLETED AND CONSTRUCTION EQUIPMENT IS NOT USING THE ROADWAY IN CONFORMANCE WITH THE DEVELOPER'S AGREEMENT. THIS WORK ALSO INCLUDES BITUMINOUS LEVELING COURSE TO PROVIDE SMOOTH SURFACE FOR FINAL WEARING SURFACE TO BE INSTALLED. ALL MANHOLE LIDS, GRATES, VALVES SHALL BE ADJUSTED TO GRADE PRIOR TO INSTALLATION OF FINAL 1 ½" WEARING COURSE.
4. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408. ALL CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH BULLETIN 15 AND THE STANDARDS SET FORTH IN PENNDOT PUBLICATIONS 70, 72M, AND 408.
5. LOCATION AND INSTALLATION OF ALL STREET SIGNS (STREET IDENTIFICATION, STOP, SPEED LIMIT, ETC.) SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD REQUIREMENTS AND AS DIRECTED BY THE TOWNSHIP. DEVELOPER TO PROVIDE A SIGNAGE PLAN FOR REVIEW AND APPROVAL OF TOWNSHIP.
6. SIDEWALK, CROSSWALK, AND CURB RAMP INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN.
7. DEVELOPER'S TRAFFIC ENGINEER TO PROVIDE TRAFFIC COUNTS AND ESALs FOR MIX DESIGN WITH SHOP DRAWING SUBMITTAL.

RD-05

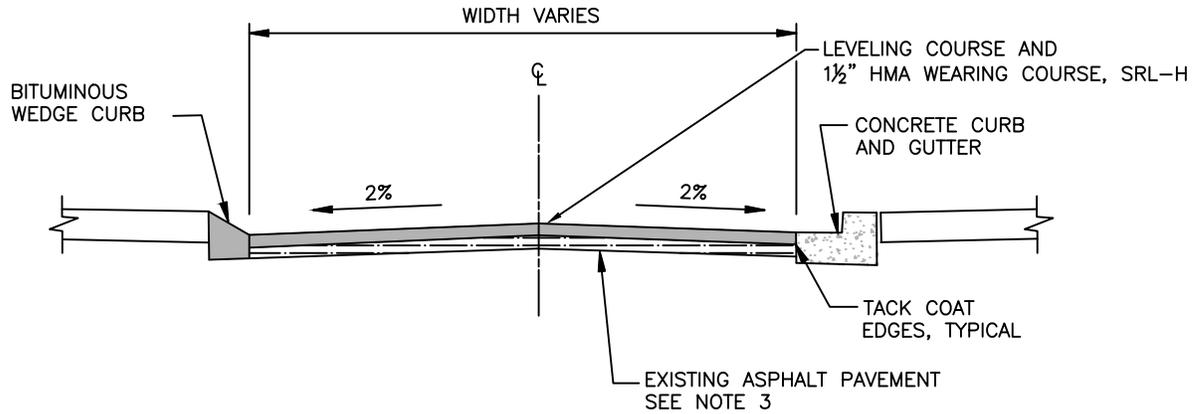
Local Residential Street

SCALE: N.T.S.

DATE: April 2016 FILE: RD-05 Local Residential Street.dwg



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NOTES:

1. 2" MIN. MILL/PROFILE. VARY THICKNESS AS REQUIRED TO OBTAIN 2% DRAINAGE SLOPE.
2. MILL FACE OF BITUMINOUS WEDGE CURB 1 1/2". DO NOT REMOVE THE ENTIRE CURB.
3. MILL KEYWAYS IN BITUMINOUS PAVEMENT AROUND INLETS, MANHOLES, AND UTILITY VALVES BY HAND IF NECESSARY, TO CONFORM WITH NEWLY MILLED PAVEMENT
4. MINIMUM WIDTH OF KEYWAY TO BE 3'.
5. SEAL ALL COLD JOINTS AND GUTTER LINES.
6. DEVELOPER'S TRAFFIC ENGINEER TO PROVIDE TRAFFIC COUNTS AND ESALs FOR MIX DESIGN WITH SHOP DRAWING SUBMITTAL.
7. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408. ALL CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH BULLETIN 15 AND THE STANDARDS SET FORTH IN PENNDOT PUBLICATIONS 70, 72M, AND 408.
8. LOCATION AND INSTALLATION OF ALL STREET SIGNS (STREET IDENTIFICATION, STOP, SPEED LIMIT, ETC.) SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD REQUIREMENTS AND AS DIRECTED BY THE TOWNSHIP.
9. SIDEWALK, CROSSWALK, AND CURB RAMP INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN.

RD-06

Bituminous Pavement Milling, Profiling And Resurfacing

SCALE: N.T.S.

DATE: April 2016 FILE: RD-06 Milling, Profiling, Resurfacing.dwg



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TYPE	ARTERIAL STREETS RD-01	COLLECTOR STREETS		LOCAL STREETS	
		COMMERCIAL RD-02	RESIDENTIAL RD-03	COMMERCIAL RD-04	RESIDENTIAL RD-05
CLEAR TRIANGLES	500'	400'	400'	250'	250'
STREET MAXIMUM GRADE	6%	6%	10%	10%	12%
MINIMUM SIGHT DISTANCE VERTICAL CURVES	500'	350'	275'	275'	200'
MINIMUM CENTERLINE RADIUS	1000'	600'	400'	400'	100'
RIGHT-OF-WAY WIDTH	80' to 100'	70' to 80'	50'	60'	50'
CARTWAY WIDTH	51' to 72'	39'	25'	25'	21'
REVERSE CURVE MIN. TRANSIENT	300'	150'	150'	150'	100'
MINIMUM STREET GRADE	1%	1%	1%	1%	1%
MAXIMUM CUL-DE-SAC PAVEMENT GRADE	4%	4%	5%	4%	5%
MAXIMUM DESIGN SPEED	45 to 60	35 to 40	35	30	30

RD-07

Street Design Standards

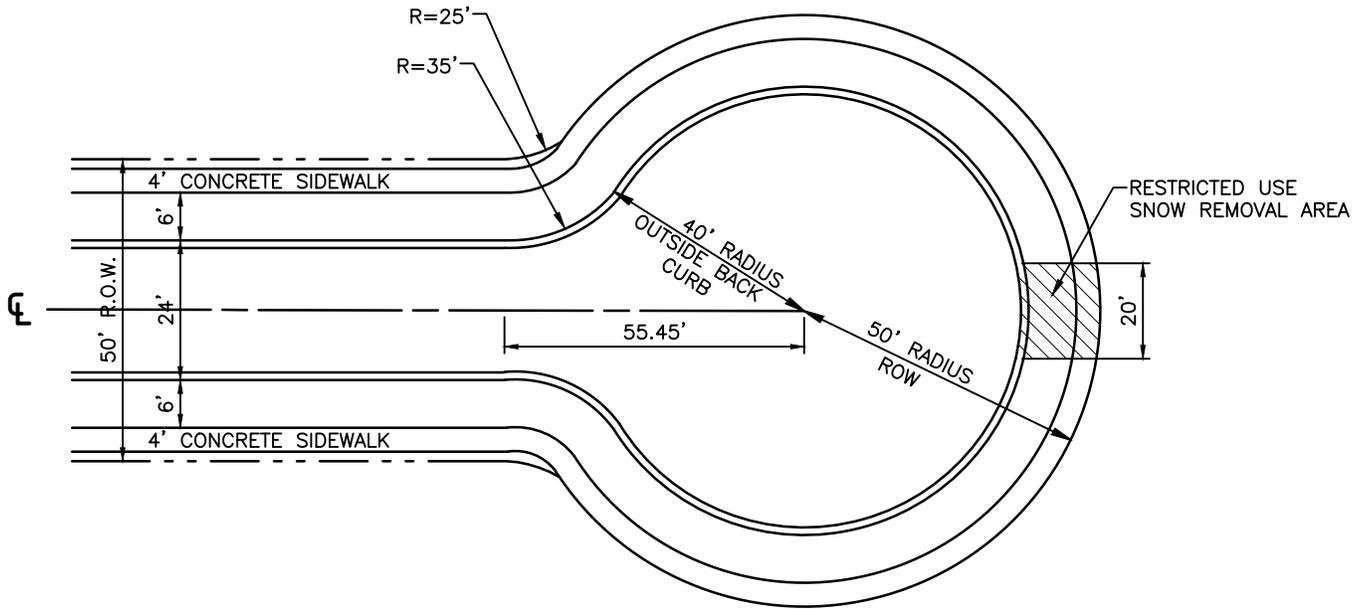
SCALE: N.T.S.

DATE: April 2016 FILE: RD-07 Street Design Standards.dwg

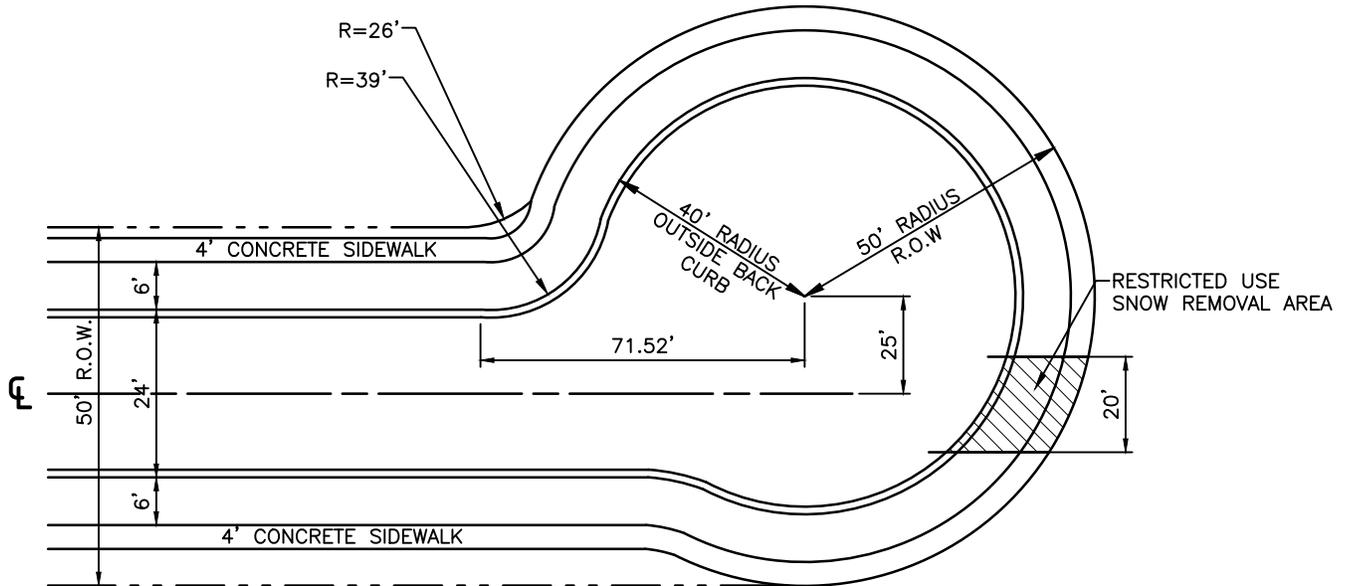


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TYPICAL



OFFSET



RD-08

Cul-de-Sac (Residential)

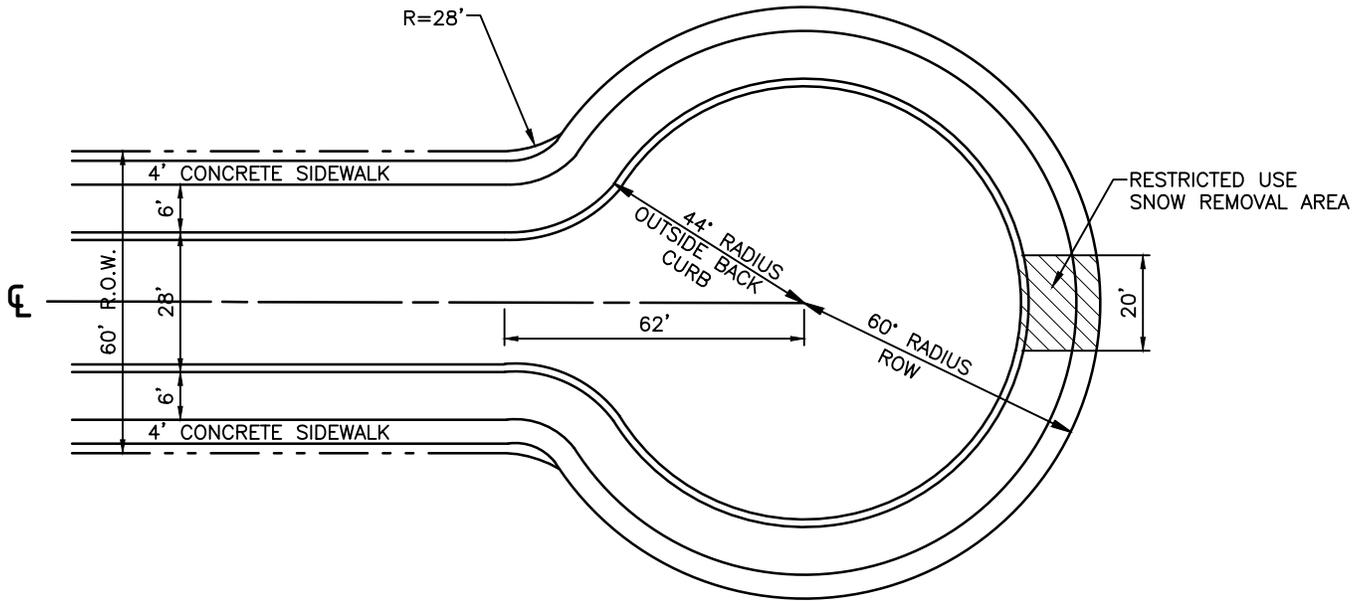
SCALE: N.T.S.

DATE: April 2016 FILE: RD-08 Cul-de-Sac (Residential).dwg

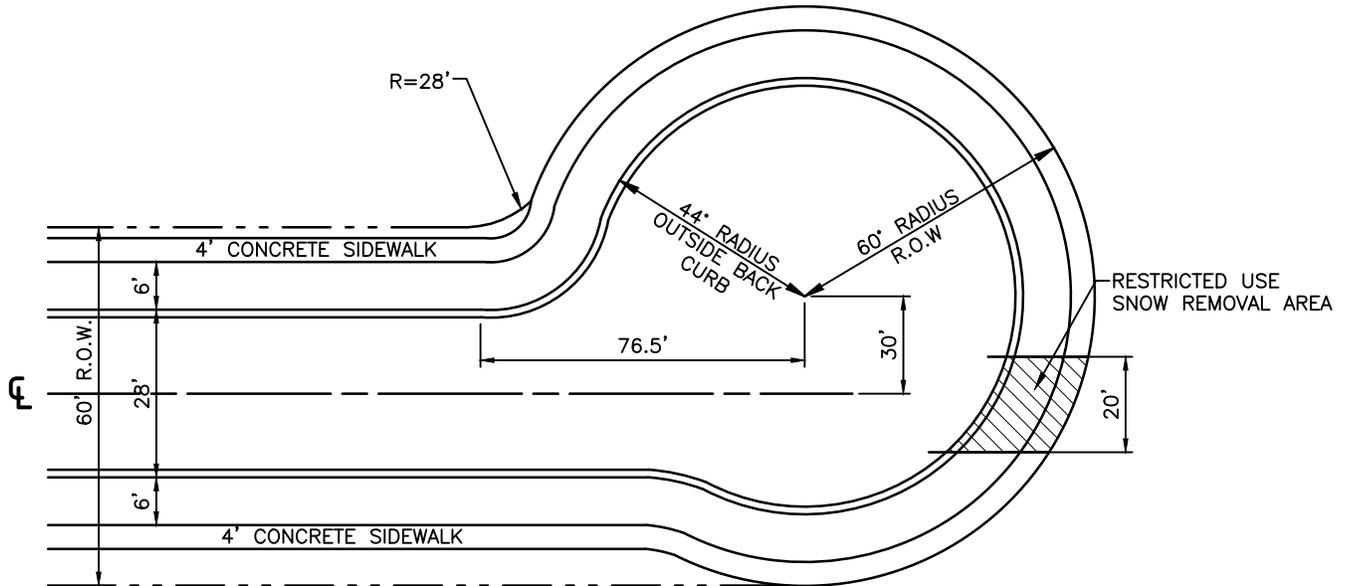


Brighton Township
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TYPICAL



OFFSET



RD-09

Cul-de-Sac (Commercial)

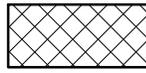
SCALE: N.T.S.

DATE: April 2016 FILE: RD-09 Cul-de-Sac (Commercial).dwg

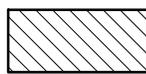


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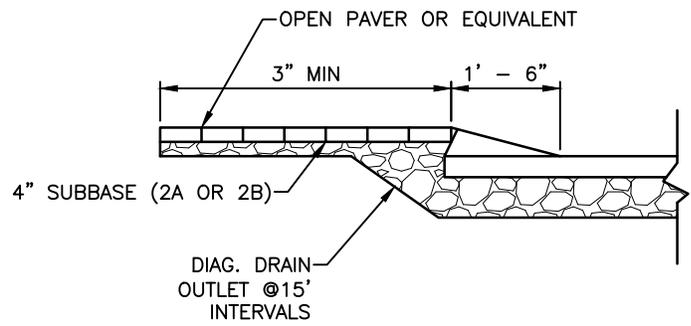
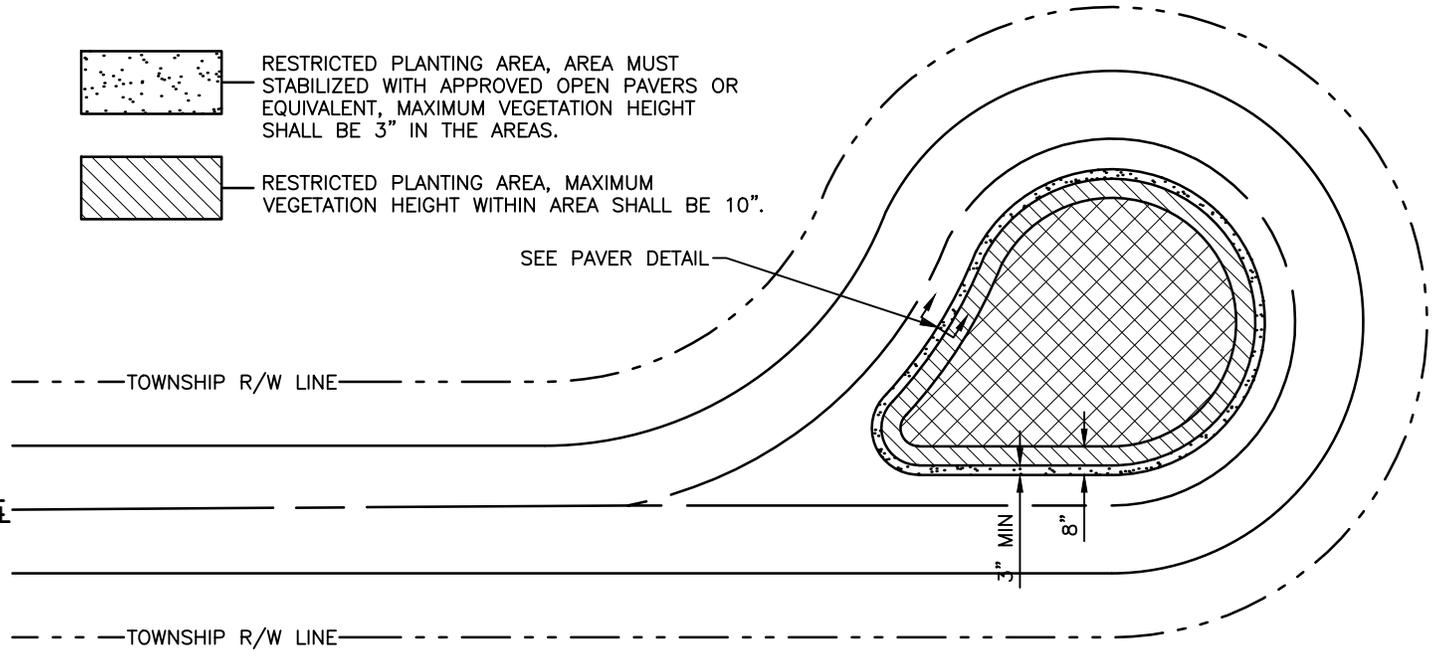
n:\PROJ\205\details\brighton_twp\dwg\Roadway\RD-10_Cul-de-sac w Island Emergency.dwg Layout=Cul-d-Sac with Island and Planting Requirements to Allow Vehicles

 UNRESTRICTED AREA

 RESTRICTED PLANTING AREA, AREA MUST STABILIZED WITH APPROVED OPEN PAVERS OR EQUIVALENT, MAXIMUM VEGETATION HEIGHT SHALL BE 3" IN THE AREAS.

 RESTRICTED PLANTING AREA, MAXIMUM VEGETATION HEIGHT WITHIN AREA SHALL BE 10".

SEE PAVER DETAIL



PAVER DETAIL
NOT TO SCALE

NOTES:
ALL ISLAND FEATURES ARE TO BE MAINTAINED
BY HOMEOWNERS ASSOCIATION.

RD-10

Cul-de-Sac With Island And Planting Requirements For Vehicles

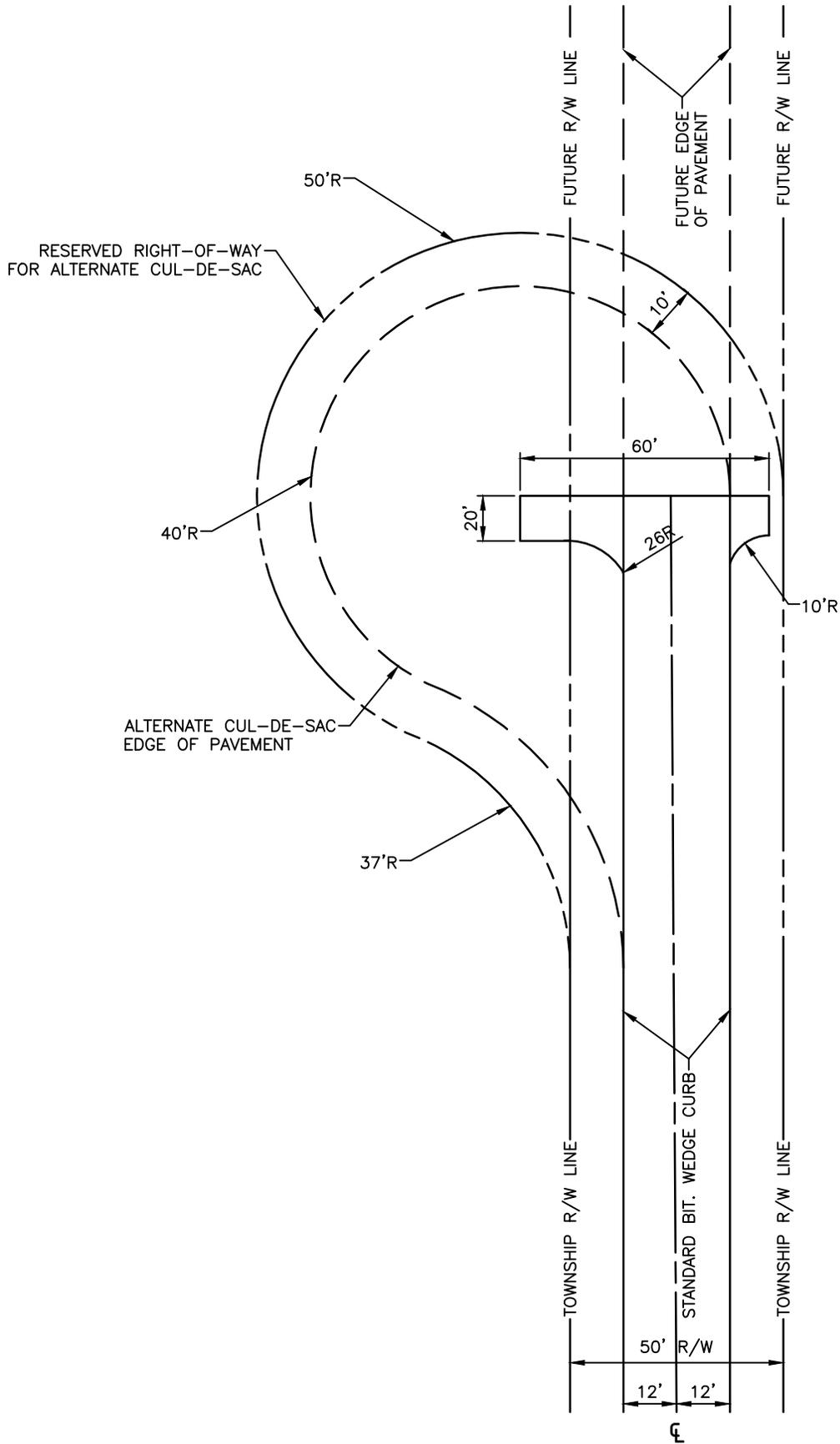
SCALE: N.T.S.

DATE: April 2016 FILE: RD-10 Cul-de-sac W Island Emergency.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Roadway\RD-11 Hammerhead Turanaround.dwg Layout=Multi-Phase residential Temp. Hammerhead Turnaround



RD-11

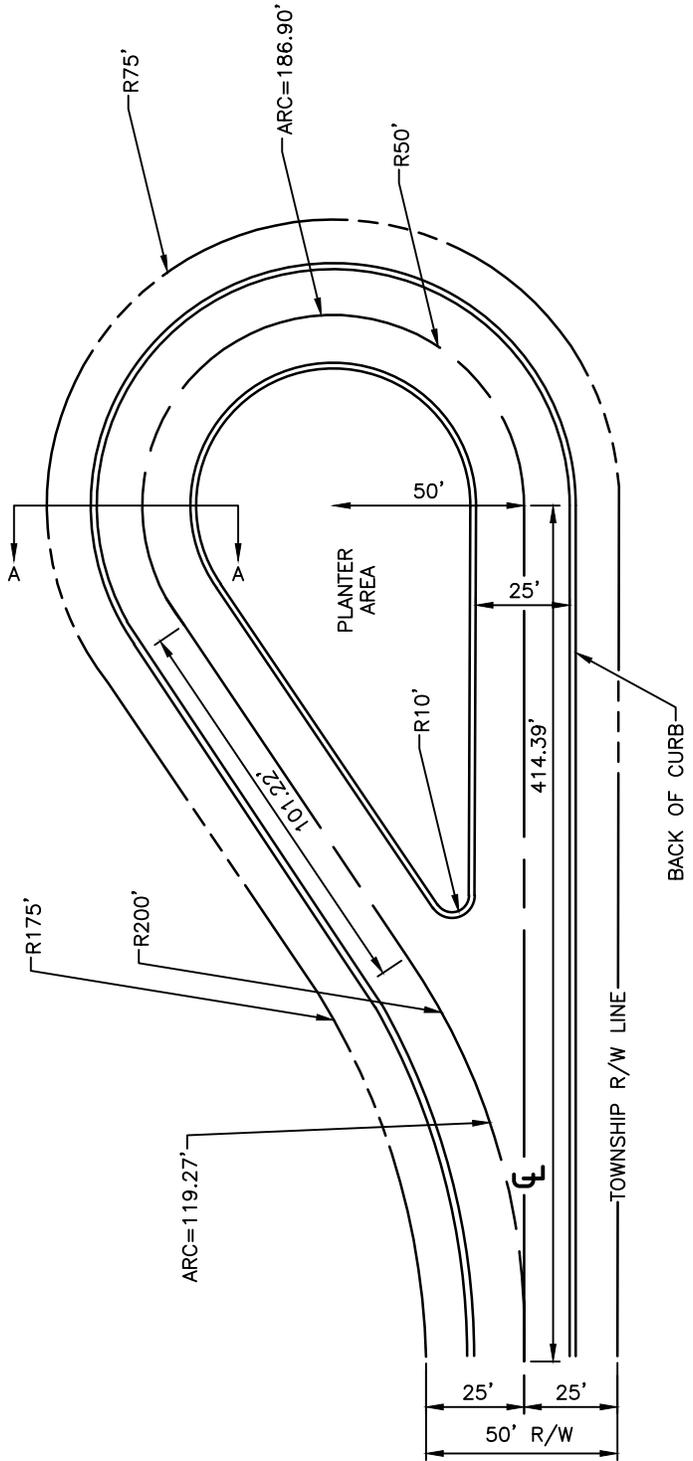
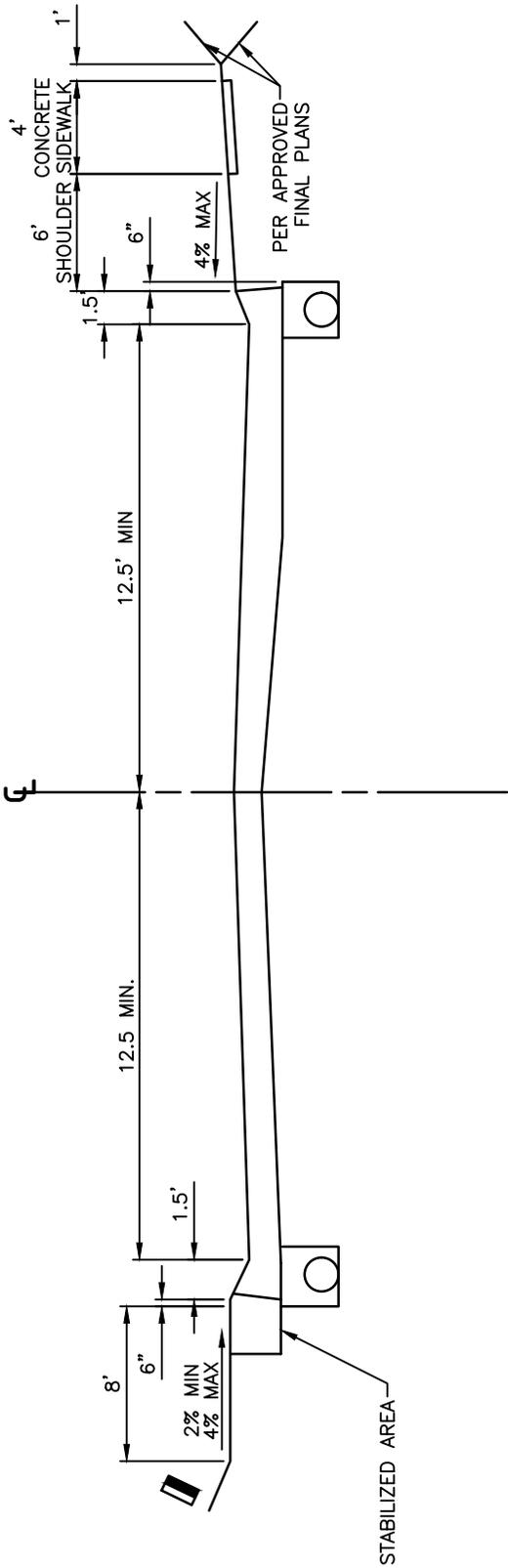
Multi-Phase Residential Temp. Hammerhead Turnaround

SCALE: N.T.S.

DATE: April 2016 FILE: RD-11 Hammerhead Turanaround.dwg



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ISLAND CONTOUR GRADING AREA

NOTE: SLOPE ACROSS CUL-DE-SAC MIN. 1%, MAX. 6%

RD-13

Cul-de-Sac #2 With Island (Residential Or Commercial)

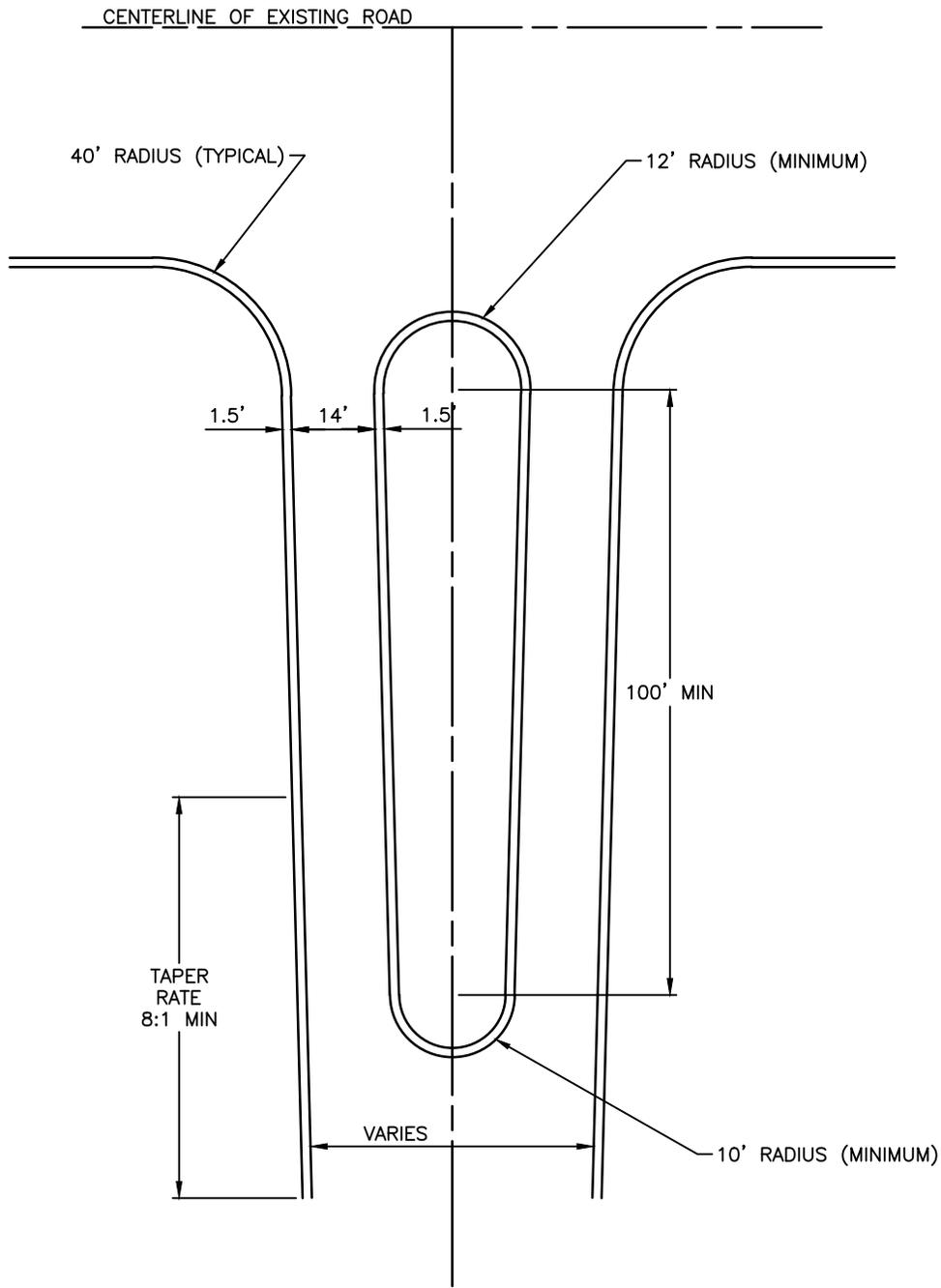
SCALE: N.T.S.

DATE: April 2016 FILE: RD-13 Cul-de-sac 2 W Island.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Roadway\RD-14_entrance Drive w Island.dwg Layout=Entrance Drive with Island



SEE TYPICAL STREET SECTIONS
FOR STANDARD STREET WIDTHS

RD-14

Entrance Drive With Island

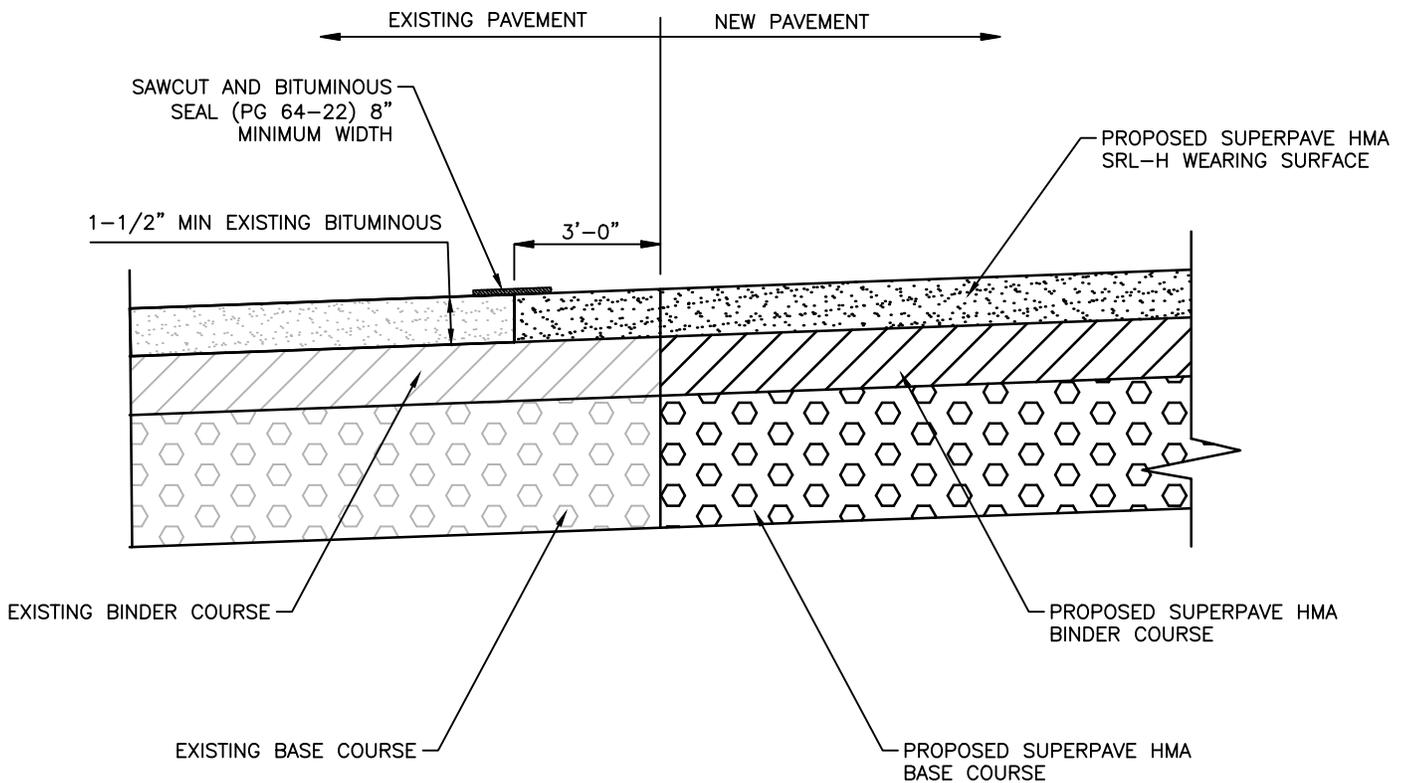
SCALE: N.T.S.

DATE: April 2016 FILE: RD-14 Entrance Drive W Island.dwg



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n:\PROJ\205\details\brighton_twp\Roadway\RD-15 Asphalt Keyway.dwg Layout=Paving Notch



RD-15

Asphalt Keyway

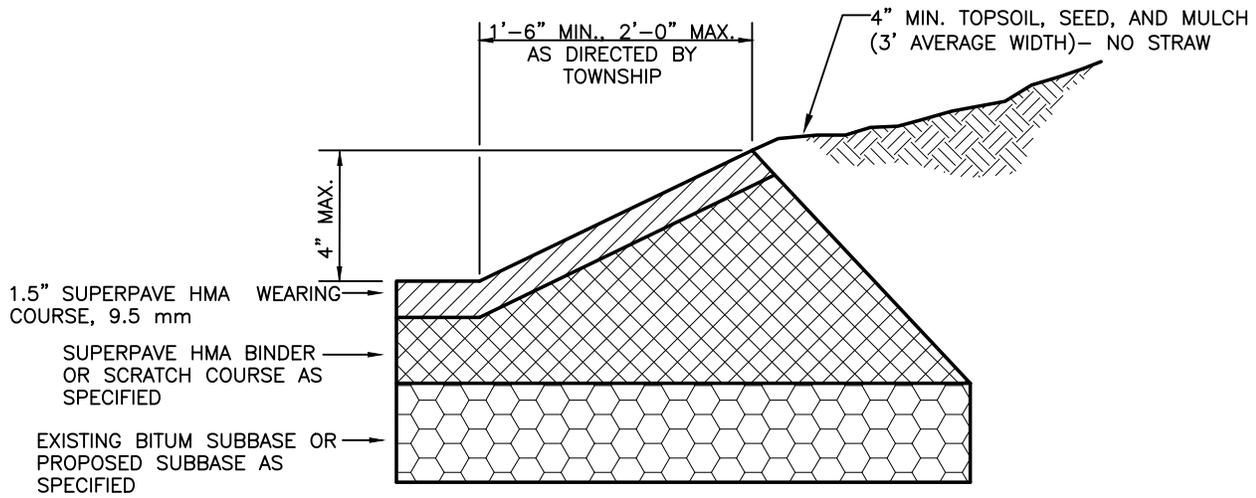
SCALE: N.T.S.

DATE: April 2016 FILE: RD-15 Asphalt Keyway.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Roadway\RD-16 Bit. Wedge Curb.dwg Layout=Bituminous Wedge Curb



NOTES:

1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408.
2. COORDINATE WEDGE CURB WITH DRIVEWAY REPLACEMENT.

RD-16

Bituminous Wedge Curb

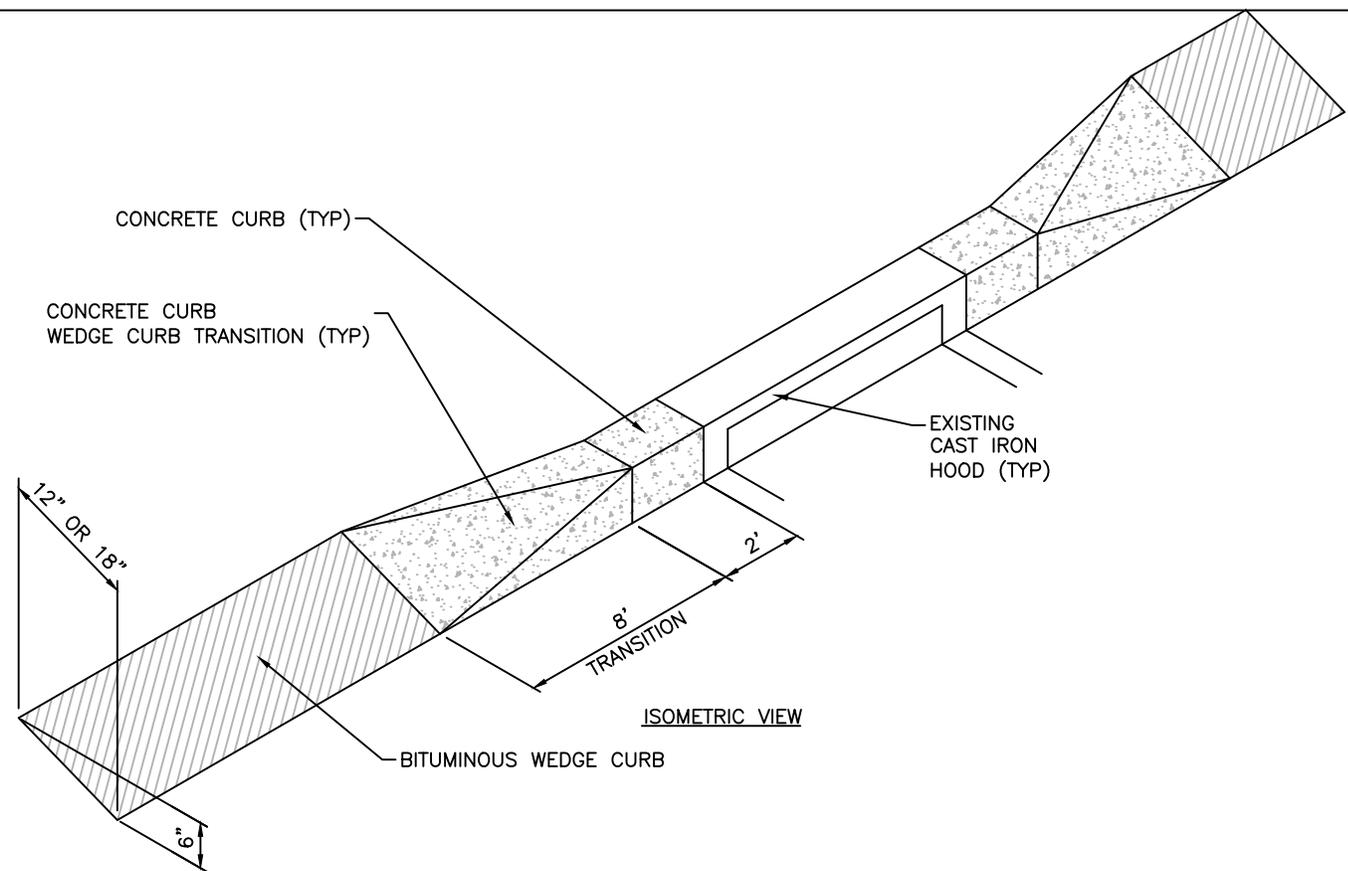
SCALE: N.T.S.

DATE: April 2016 FILE: RD-16 Bit. Wedge Curb.dwg

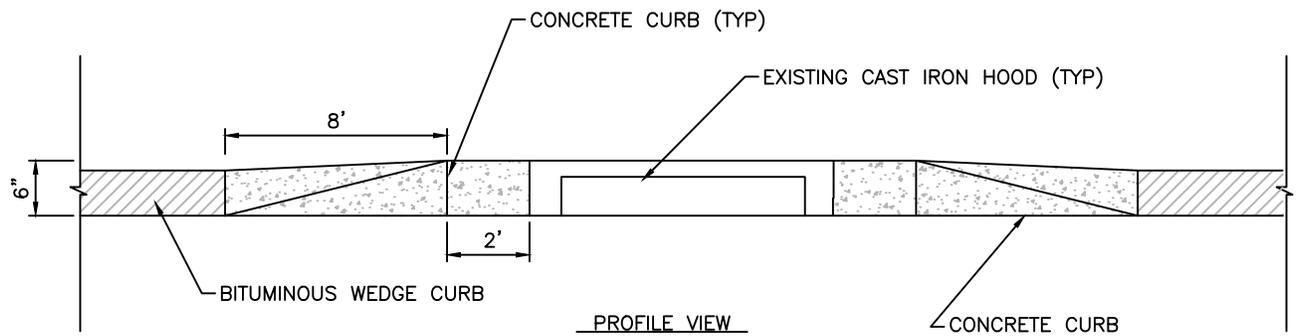


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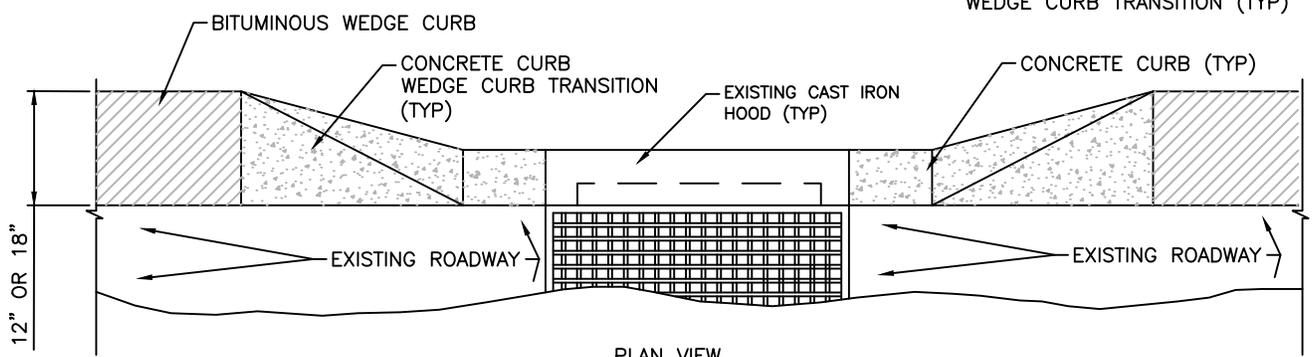
n:\PROJ\205\details\brighton_twp\dwg\Roadway\RD-17 Wedge Curb Transition at Type C Inlet.dwg



ISOMETRIC VIEW



PROFILE VIEW



PLAN VIEW

NOTES:

1. DETAIL IS FOR PAVING WITH WEDGE CURBS AT EXISTING INLETS ONLY. NEW INLETS IN AREAS WITH WEDGE CURB ARE TO BE TYPE M INLETS.
2. MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408.

RD-17

Wedge Curb Transition At Existing Type C Inlet

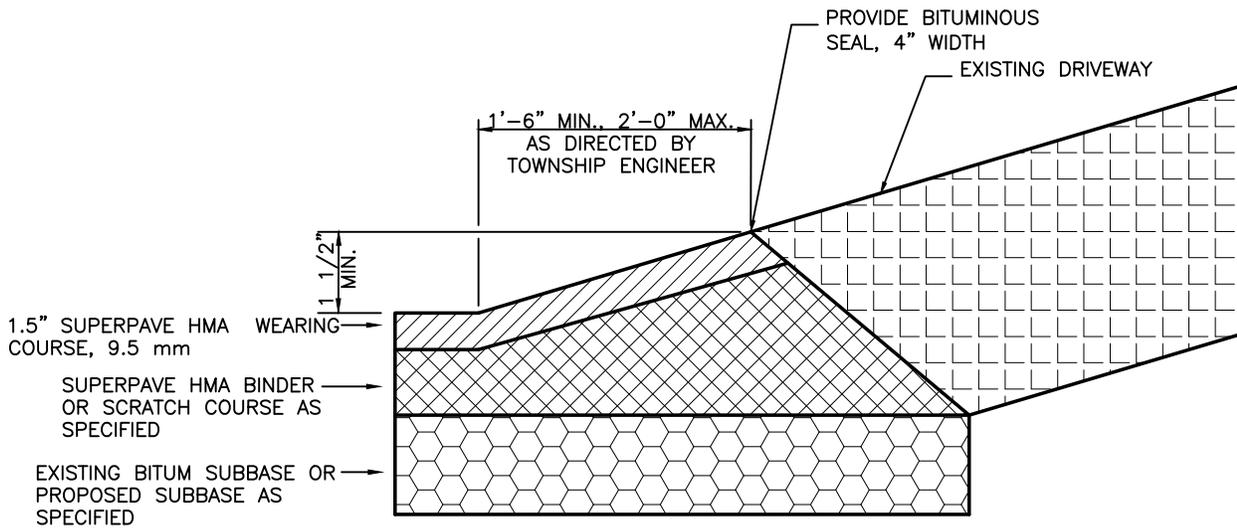
SCALE: N.T.S.

DATE: April 2016 FILE: RD-17 Wedge Curb Transition At Type C Inlet.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Roadway\RD-18 Bit. Depressed Curb.dwg Layout=Depressed Bituminous Wedge Curb



NOTES:

1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408.
2. COORDINATE WEDGE CURB WITH DRIVEWAY REPLACEMENT.

RD-18

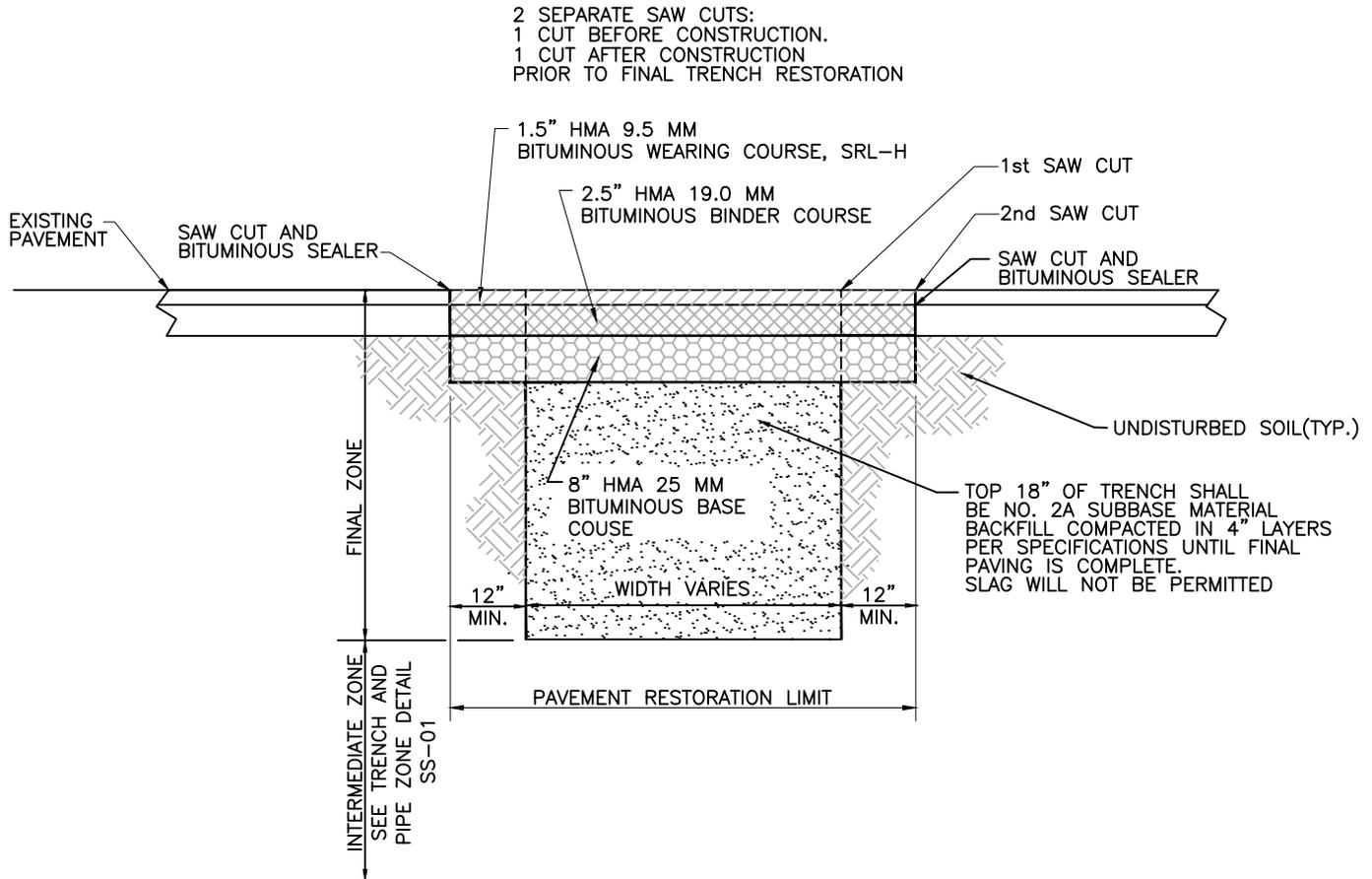
Depressed Bituminous Wedge Curb

SCALE: N.T.S.

DATE: April 2016 FILE: RD-18 Bit. Depressed Curb.dwg



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2 SEPARATE SAW CUTS:
 1 CUT BEFORE CONSTRUCTION.
 1 CUT AFTER CONSTRUCTION
 PRIOR TO FINAL TRENCH RESTORATION

NOTES:

1. REFER TO CURRENT PENNDOT PUB. 408 SPECIFICATIONS FOR ROADWAY PAVEMENT THICKNESS FOR WORK COMPLETED WITHIN STATE RIGHT OF WAYS.
2. FOR RESTORATION OF TAR & CHIPPED ROADS REFER TO PENNDOT PUB. 408, SECTION 470. REPLACE TAR & CHIP WITH DOUBLE WASHED 1B SLAG WITH APPLICATION RATE OF EMULSIFIED ASPHALT OF 0.35-0.40 OR AS SPECIFIED BY PUBLIC WORKS.
3. ALL BITUMINOUS MATERIAL TO HAVE MAXIMUM RAP CONTENT OF 15%.

RD-19

Trench Repaving For Bituminous Paving

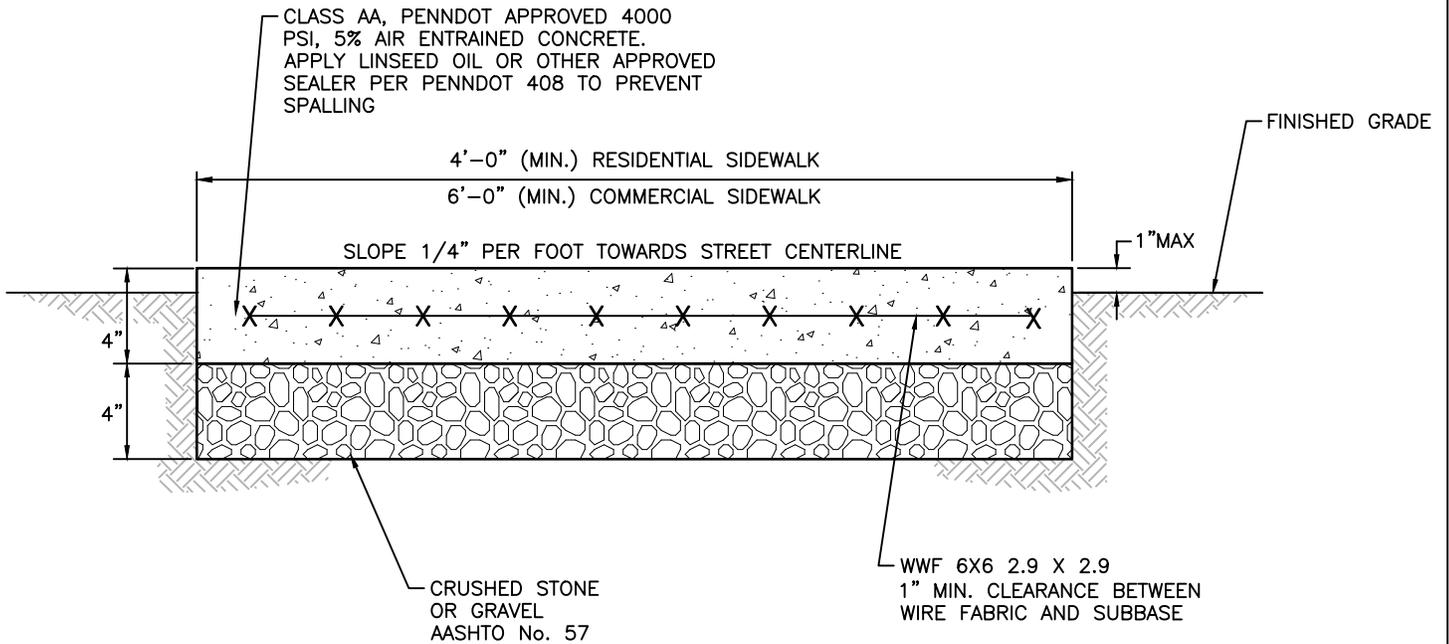
SCALE: N.T.S.

DATE: April 2016 FILE: RD-19 Bituminous Pavement Trench Restoration.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Roadway\RD-20 Concrete Sidewalk.dwg Layout=Concrete Sidewalk



NOTES:

1. CONSTRUCT SIDEWALKS IN ACCORDANCE WITH PENNDOT SPECIFICATIONS.
2. WALK SHALL BE CROSS SCORED EVERY FIVE FEET (5'). WALK SHALL HAVE TROWELED EDGES WITH A STIFF BROOM FINISH.
3. PROVIDE 1/2" PREMOLDED EXPANSION JOINT MATERIAL AT 20' SPACING.
4. IF A DRIVEWAY IS TO BE CONSTRUCTED OVER A SIDEWALK, THE CONCRETE SHALL BE PLACED AT 6" DEPTH; SEE DETAIL SD-01A.
5. PROVIDE TWO (2) No 4 DOWELS AT PROPERTY LINES.
6. PREPATORY WORK ON REINFORCEMENT MUST BE INSPECTED BY TOWNSHIP PRIOR TO POURING OF CONCRETE.
7. CURING AND PROTECTING COVERS SHALL BE PROVIDED IN ACCORDANCE WITH FORM 408, SECTION 711.
8. PROVIDE ADA CURB RAMPS AT ALL INTERSECTIONS WHERE WALK EXISTS WITHIN PLAN.
9. RESIDENTIAL USE, MINIMUM WIDTH SHALL BE 4 FEET MIN. OR MATCH EXISTING WIDTH.
10. COMMERCIAL USE, MINIMUM WIDTH SHALL BE 6 FEET MIN. OR MATCH EXISTING WIDTH.

RD-20

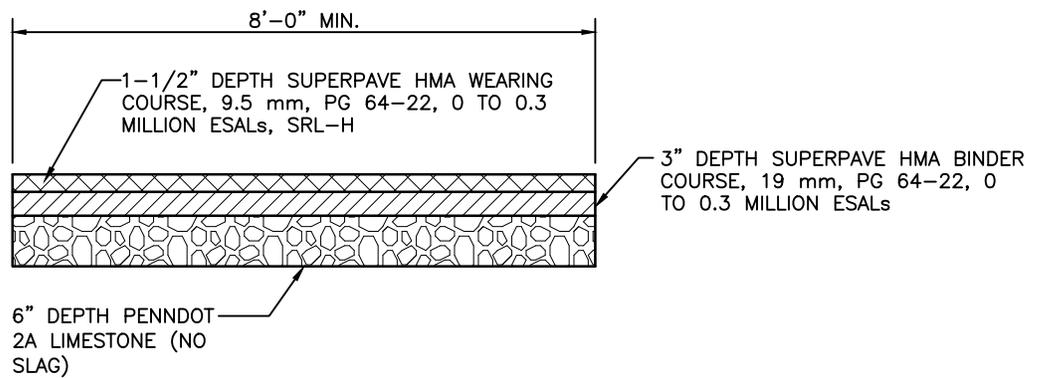
Concrete Sidewalk

SCALE: N.T.S.

DATE: April 2016 FILE: RD-20 Concrete Sidewalk.dwg



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NOTES:

1. CONSTRUCT SIDEWALK IN ACCORDANCE WITH PENNDOT SPECIFICATIONS.
2. SLOPE SIDEWALK AT 1/4" PER FOOT TOWARDS STREET CENTERLINE.

RD-21

Multi-Purpose Walking And Biking Path

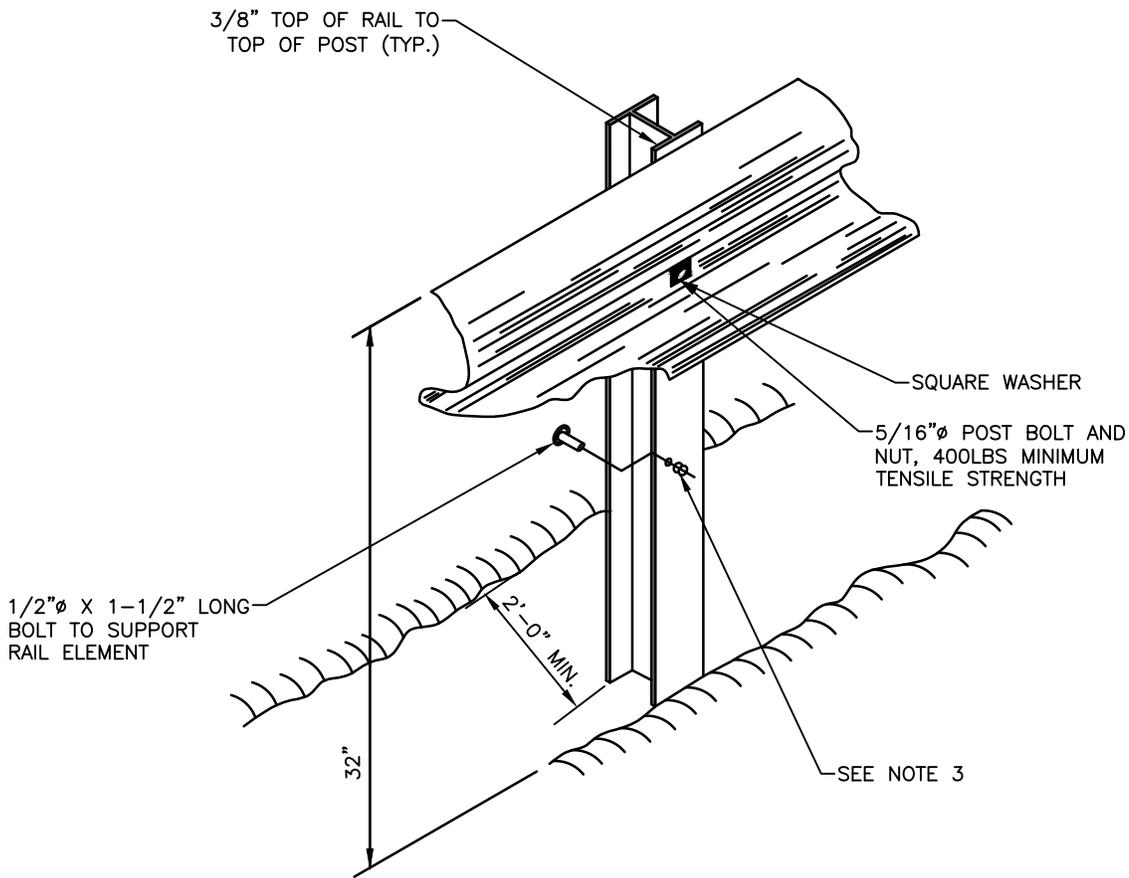
SCALE: N.T.S.

DATE: April 2016 FILE: RD-21 Multi-purpose Walking Biking Path.dwg



Brighton Township
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n:\PROJ\205\details\brighton.twp\dwg\Roadway\RD-22_Type 2-W Guiderail.dwg Layout=Type 2 Weak Post Guiderail



NOTES:

1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 620.
2. THE 3 3/8" X 2 1/4" COLD FORMED CHANNEL POST, S3 X 5.7 POST AND ALUMINUM ALLOY POST MAY BE BID AS ALTERNATIVES FOR TYPE 2 WEAK POST GUIDE RAIL SYSTEM; HOWEVER, MIXING OF DIFFERENT POSTS WILL NOT BE ACCEPTABLE WITHIN A PROJECT.
3. DURING ERECTION, USE TEMPORARY SUPPORT BOLTS OR TEMPORARY DRIFT PINS TO SUPPORT THE RAIL ELEMENT UNTIL THE 5/16" POST BOLTS ARE PROPERLY TORQUED.
4. ATTACH W-BEAM RAIL ELEMENT TO EACH POST, SPLICE ONLY AT POSTS AND LAP IN THE DIRECTION OF TRAFFIC.

REFERENCE RC-53M - PENNDOT PUBLICATION 72M

RD-22

Type 2 Weak Post Guiderail

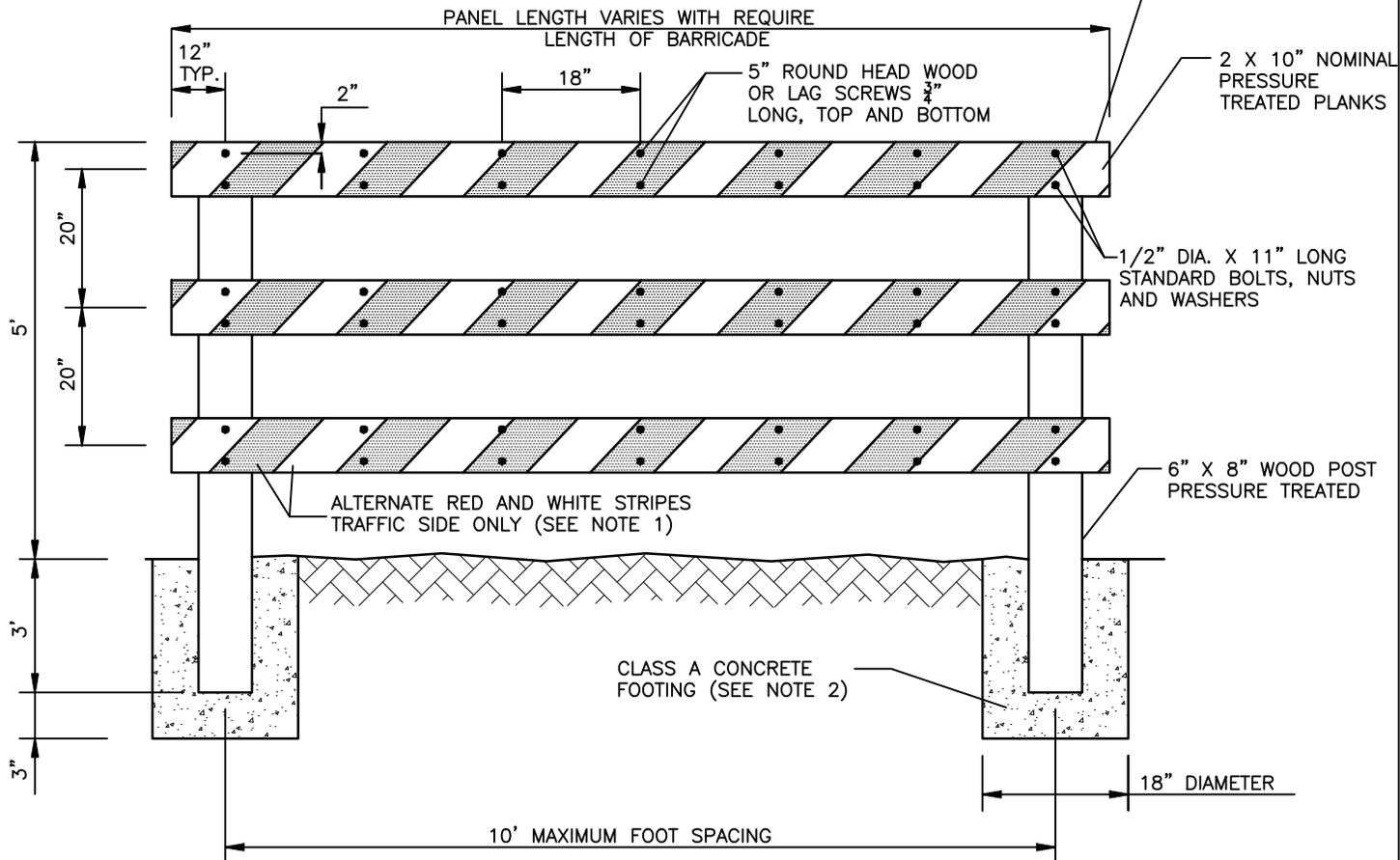
SCALE: N.T.S.

DATE: April 2016 FILE: RD-22 Type 2-W Guiderail.dwg

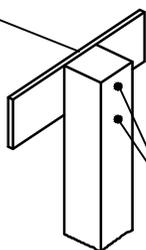


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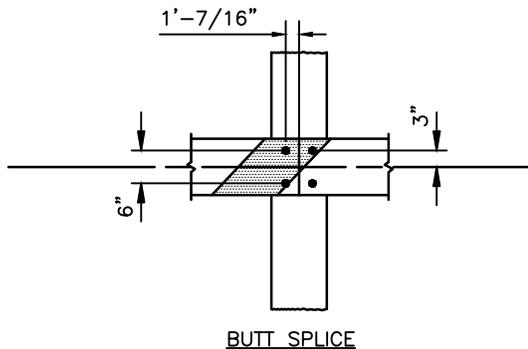
CLASS I, CLASS I-A OR CLASS II REFLECTIVE MATERIAL APPLIED TO 0.063" X 10" ALUMINUM BLANKS AND FASTENED TO WOOD PLANKS (SEE NOTE 1)



2X10" NOMINAL PRESSURE TREATED PLANKS



1/2" DIA. X 11" LONG STANDARD BOLTS, NUTS AND WASHERS



BUTT SPLICE

NOTES

1. ONLY CLASS I, CLASS I-A OR CLASS II REFLECTIVE SHEETING MATERIAL SUPPLIED BY A MANUFACTURER AS LISTED IN PENNDOT BULLETIN 15 PERMITTED.
2. MECHANICALLY DRIVE POSTS OR ERECT IN CONCRETE FOOTING.

REFERENCE RC-63 - PENNDOT PUBLICATION 72

RD-23

Barricade For Dead End Roads

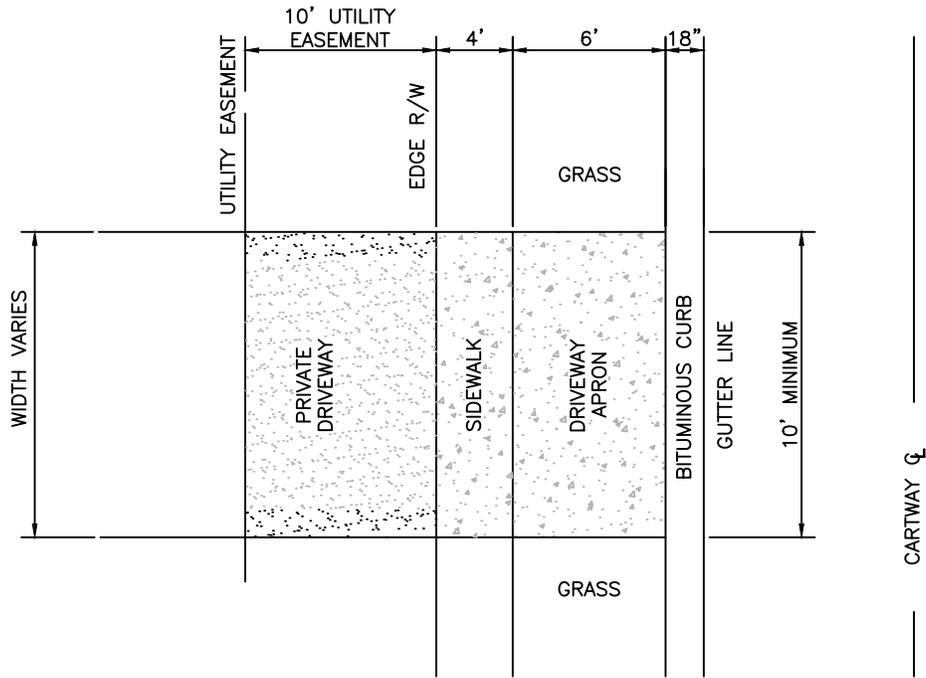
SCALE: N.T.S.

DATE: April 2016 FILE: RD-23 Barricade For Dead End Road.dwg



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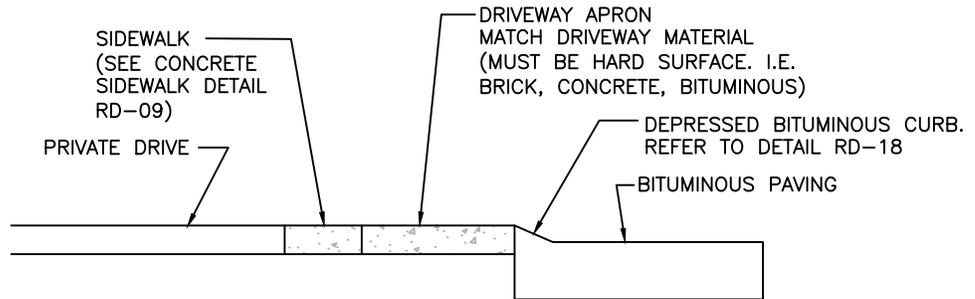
n:\PROJ\2015\Details\Brighton\RD-23 Barricade For Dead End Road.dwg



COMMERCIAL DRIVEWAY SPECIFICATIONS:

BITUMINOUS:
 4" AGGREGATE BASE COURSE
 2" HMA BINDER COURSE
 1" HMA WRG COURSE

CONCRETE:
 4" PENNDOT NO.57
 6" 4000PSI CLASS A CONCRETE



NOTES:

1. SIDEWALK MAY BY LOWERED IN VICINITY OF APRON SO THAT A SMOOTH TRANSITION FROM THE SIDEWALK TO THE DRIVEWAY GRADE IS PROVIDED. ALL GRADES MUST COMPLY WITH ADA REQUIREMENTS. (ONLY WITH TOWNSHIP APPROVAL)
2. THE DRIVEWAY WITHIN THE RIGHT-OF-WAY AND UTILITY EASEMENT SHALL NOT EXCEED 10%.
3. THE SIDEWALK CROSS SLOPE IS NOT TO EXCEED 2%.
4. LOCATE DRIVEWAY TO PROVIDE MINIMUM SIGHT DISTANCES AS REQUIRED BY PENNDOT FORM M-950S.
5. PRIOR TO CONSTRUCTION, A DRIVEWAY PERMIT MUST BE SECURED IN ACCORDANCE WITH TOWNSHIP REQUIREMENTS.

SD-01

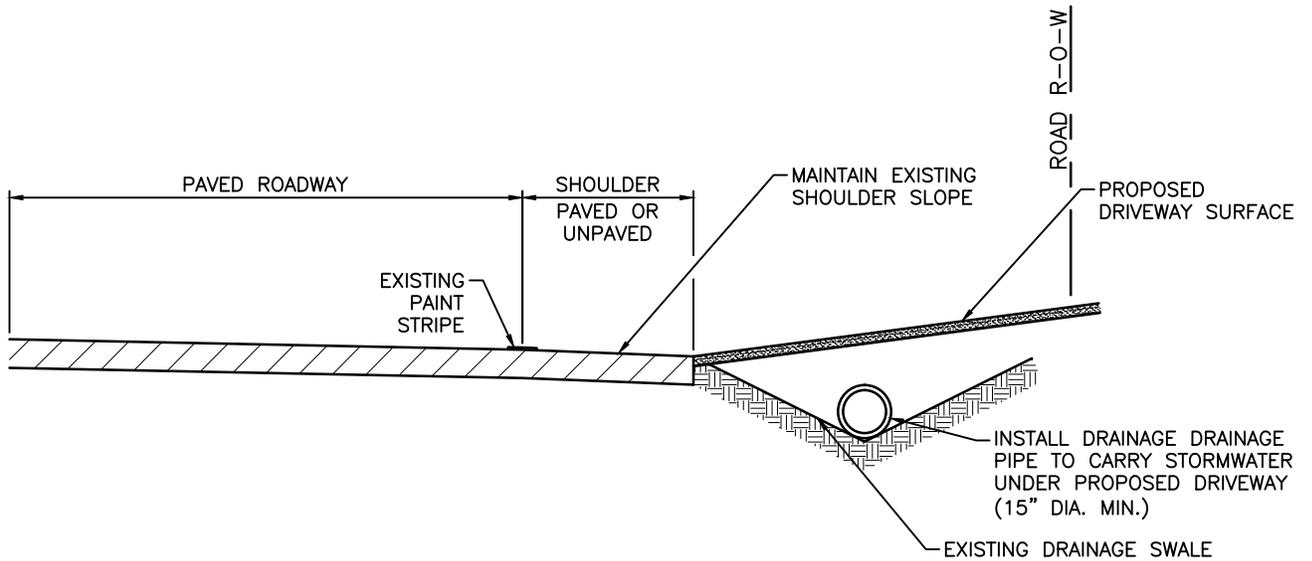
Residential Driveway

SCALE: N.T.S.

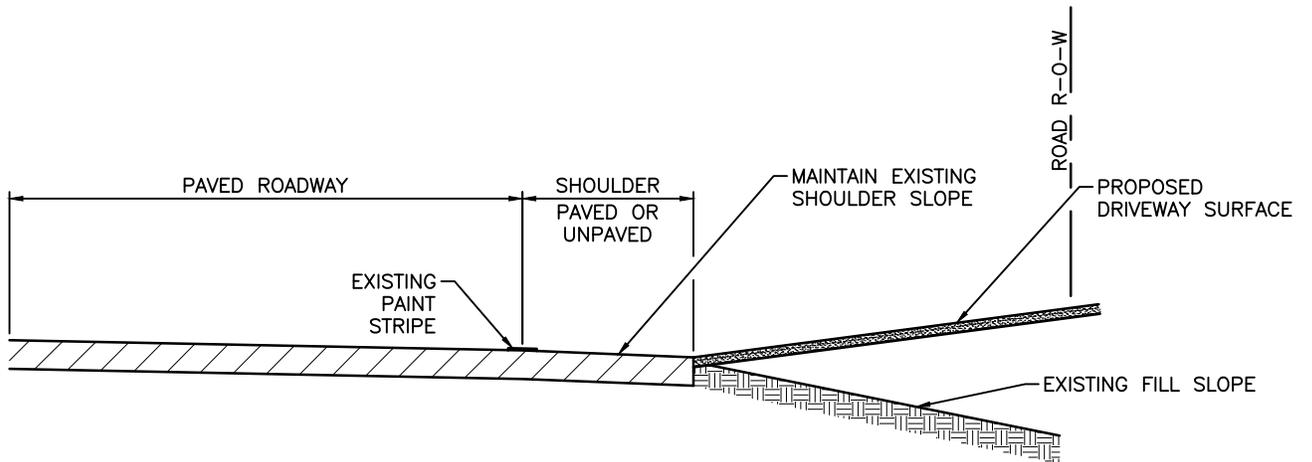
DATE: April 2016 FILE: SD-01 Residential Driveway.dwg



Brighton Township
 Beaver County, Pennsylvania
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DRIVEWAY ACROSS EXISTING DRAINAGE SWALE



DRIVEWAY NOT CROSSING EXISTING DRAINAGE SWALE

NOTES:

1. THIS DETAIL IS INTENDED FOR USE WHEN DRIVEWAYS CONNECT TO TOWNSHIP ROADWAYS THAT HAVE SHOULDERS WITHOUT CURBS.
2. THE DRIVEWAY WITHIN THE RIGHT-OF-WAY SHALL NOT EXCEED 10% GRADE.
3. THE DRIVEWAY SHALL NOT ALTER GRADES IN THE SHOULDER AREA. IF THE SHOULDER IS UNPAVED, DRIVEWAY PAVEMENT MAY EXTEND TO THE EDGE OF THE ROADWAY BUT SHALL MAINTAIN THE EXISTING SHOULDER SLOPE AWAY FROM THE ROADWAY.
4. ALTERING THE ROADWAY DRAINAGE IS PROHIBITED. THE PERMITTEE SHALL NOT ALTER THE EXISTING DRAINAGE PATTERN OR THE EXISTING FLOW OF DRAINAGE WATER, OR DIRECT ADDITIONAL DRAINAGE OF SURFACE WATER ONTO OR INTO ROADWAY FACILITIES.
5. TOWNSHIP CODE ENFORCEMENT OFFICER CAN REQUIRE THAT RESIDENT PROVIDE ADDITIONAL ON LOT STORM WATER MANAGEMENT FOR DRIVEWAYS.
6. LOCATE DRIVEWAY TO PROVIDE MINIMUM SIGHT DISTANCES AS REQUIRED BY PENNDOT FORM M-950S.
7. PRIOR TO CONSTRUCTION, A DRIVEWAY PERMIT MUST BE SECURED IN ACCORDANCE WITH TOWNSHIP REQUIREMENTS.

SD-02

Residential Driveway Connection To Rural Road

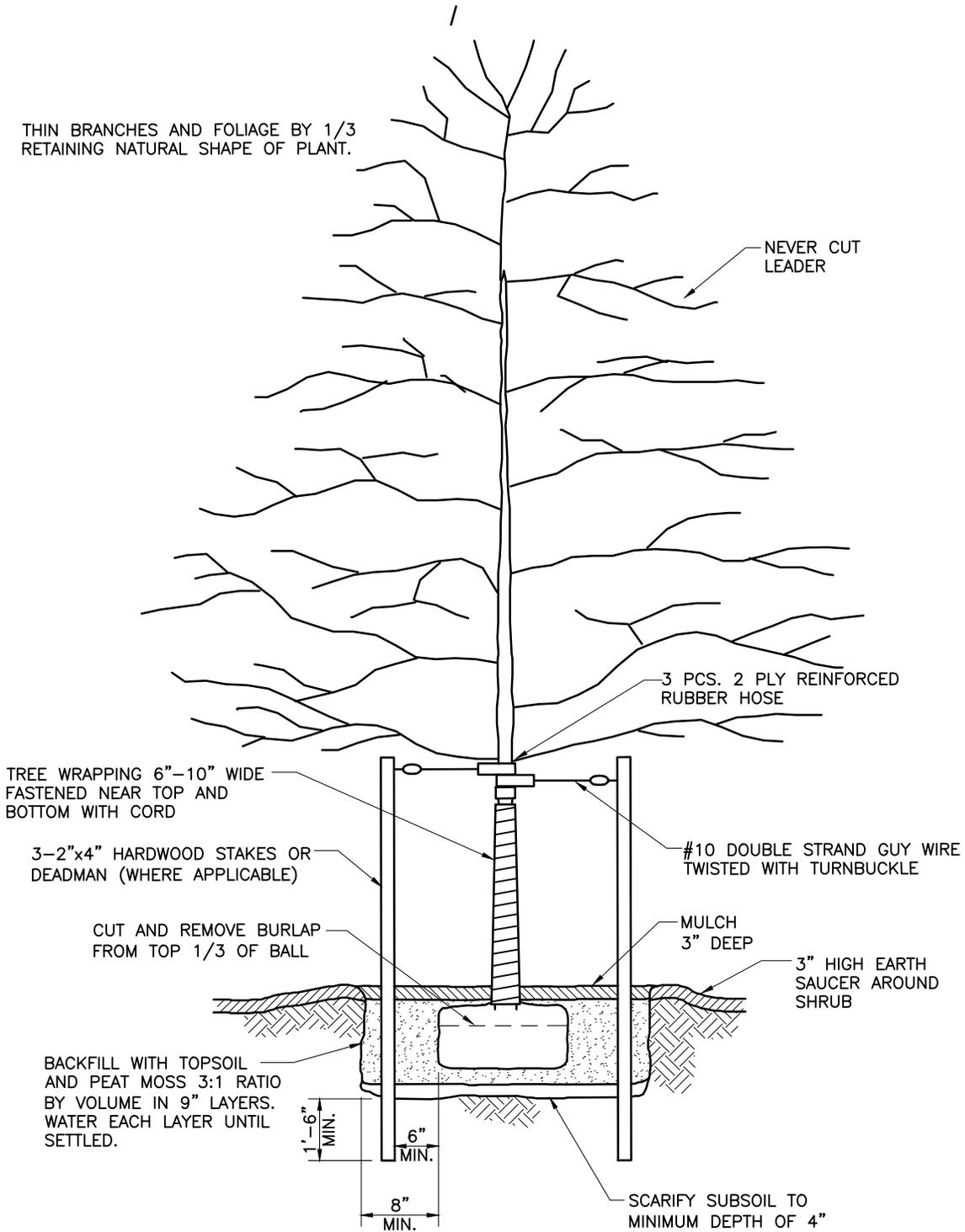
SCALE: N.T.S.

DATE: April 2016 FILE: SD-02 Driveway Connection To Rural Road.dwg



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THIN BRANCHES AND FOLIAGE BY 1/3
RETAINING NATURAL SHAPE OF PLANT.



NOTE:

1. TREE SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.
2. DECIDUOUS TREE - PRUNE BACK 1/4" ON SITE. SPRAY WITH ANTI-DRYING AGENT ACCORDING TO MANUFACTURERS INSTRUCTIONS.
3. EVERGREEN TREE - GROUND LINE TO BE THE SAME AS EXISTING AT THE NURSERY.

SD-03

Evergreen & Deciduous Planting

SCALE: N.T.S.

DATE: April 2016 FILE: SD-03 Evergreen & Deciduous Planting.dwg



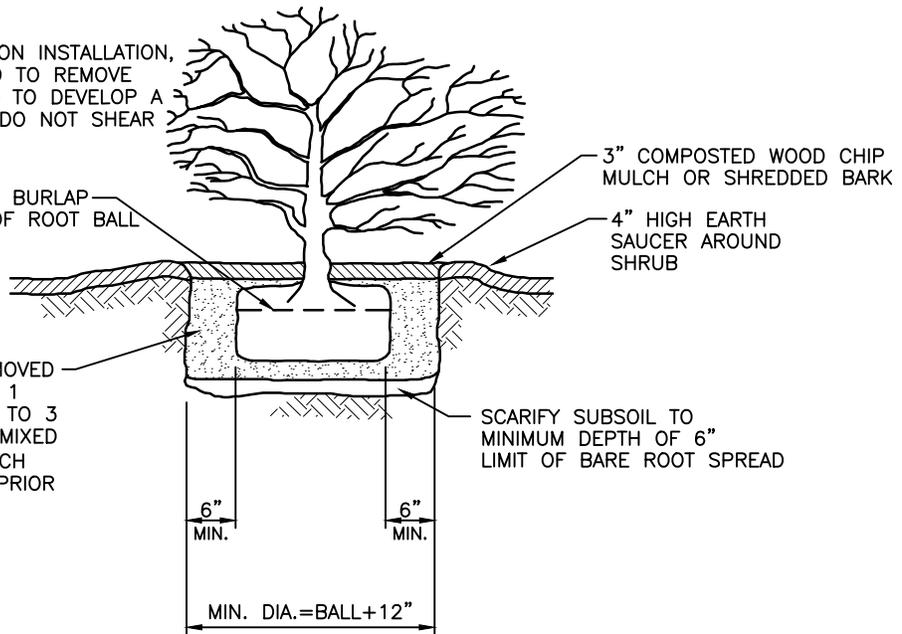
Brighton Township
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n:\PROJ\205\details\brighton_twp\dwg\Site\SD-03 Evergreen & Deciduous Planting.dwg Layout=Evergreen & Deciduous Planting

PRUNE PLANTS UPON INSTALLATION, ONLY AS REQUIRED TO REMOVE DEAD GROWTH AND TO DEVELOP A NATURAL SHAPE. DO NOT SHEAR PLANTS.

CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL

BACKFILL WITH SOIL REMOVED FROM HOLE MIXED WITH 1 PART COMPOST MANURE TO 3 PARTS SOIL. BACKFILL MIXED SOIL IN 6" LAYERS. EACH LAYER TO BE WATERED PRIOR TO PLACEMENT OF NEXT LAYER.



NOTE:

SHRUB SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.

SD-04

Shrub Planting

SCALE: N.T.S.

DATE: April 2016 FILE: SD-04 Shrub Planting Detail.dwg

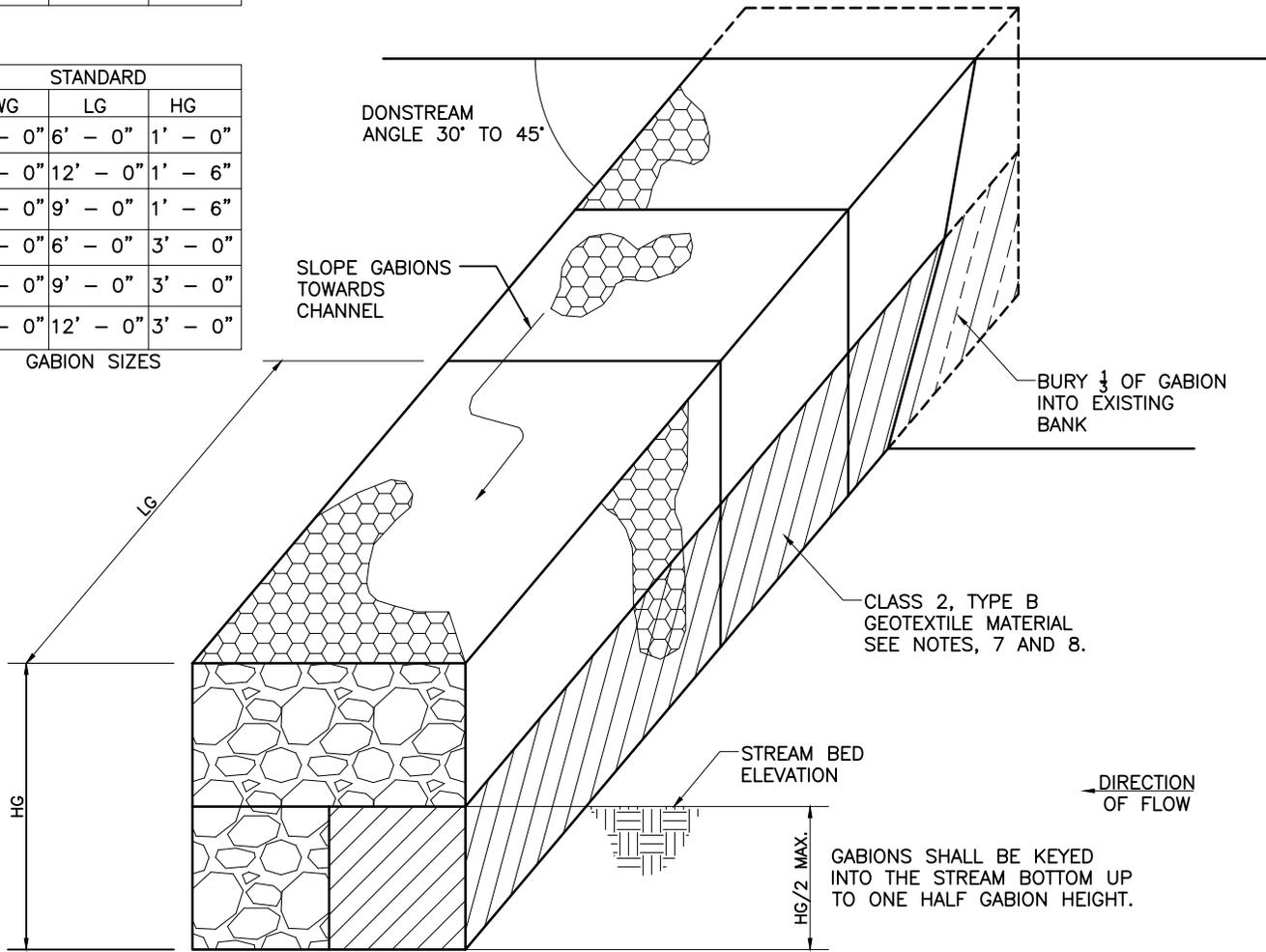


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MATTRESS TYPE		
WG	LG	HG
6' - 0"	9' - 0"	0' - 9"
6' - 0"	12' - 0"	0' - 9"

STANDARD		
WG	LG	HG
3' - 0"	6' - 0"	1' - 0"
3' - 0"	12' - 0"	1' - 6"
3' - 0"	9' - 0"	1' - 6"
3' - 0"	6' - 0"	3' - 0"
3' - 0"	9' - 0"	3' - 0"
3' - 0"	12' - 0"	3' - 0"

GABION SIZES



NOTES:

1. PROVIDE MATERIALS AND CONSTRUCTION MEET THE REQUIREMENTS OF PUBLICATION 408, SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, SECTION 626, GABIONS.
2. TYPE A GABIONS SHALL CONSIST OF WIRE-MESH BASKETS FILLED BY HAND PLACEMENT OF COARSE AGGREGATE, AT LEAST ALONG THE EXPOSED SURFACES, FOR A UNIFORM APPEARANCE.
3. TYPE B GABIONS SHALL CONSIST OF WIRE-MESH BASKETS FILLED BY HAND PLACEMENT OR SMALL POWER EQUIPMENT PLACEMENT OF COARSE AGGREGATE.
4. CORROSION RESISTANT TYPE A AND TYPE B GABIONS SHALL BE THE SAME AS TYPE A AND TYPE B GABIONS EXCEPT THAT THE WIRE MESH SHALL BE SHEATHED IN POLYVINYL CHLORIDE PLASTIC.
5. THE APRON OR TOE WALL IS REQUIRED WHERE THE SLOPE WALL IS INSTALLED ADJACENT TO WATER. THE APRON SHOULD BE APPROXIMATELY TWO TIMES AS WIDE AS THE ANTICIPATED DEPTH OF SCOUR AND THE TOE WALL HEIGHT SHOULD BE AT LEAST EQUAL TO THE ANTICIPATED DEPTH OF SCOUR.
6. WHEN GABIONS ARE PLACED ON A 1-1/2:1 SIDE SLOPE OR STEEPER, DRIVE HARDWOOD STAKES THROUGH THE GABIONS, ALONG THE TOP EDGE, TO ANCHOR THE INSTALLATION. MINIMUM EMBEDMENT OF STAKES BELOW GABION BOTTOM SHALL BE 18 INCHES.
7. PROVIDE GEOTEXTILE MATERIAL MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 212 AND SECTION 735.
8. INSTALL GEOTEXTILE MATERIAL ALONG ALL INTERFACE AREAS WITH GROUND CONTACT.

SD-05

Gabion Used For Channel Deflector

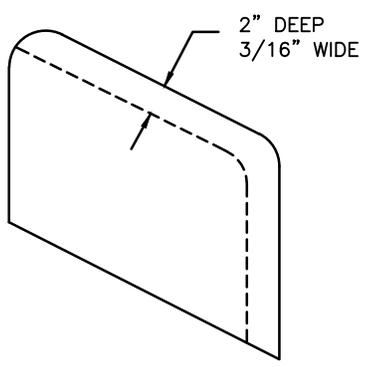
SCALE: N.T.S.

DATE: April 2016 FILE: SD-05 Gabion Used For Channel Deflector.dwg

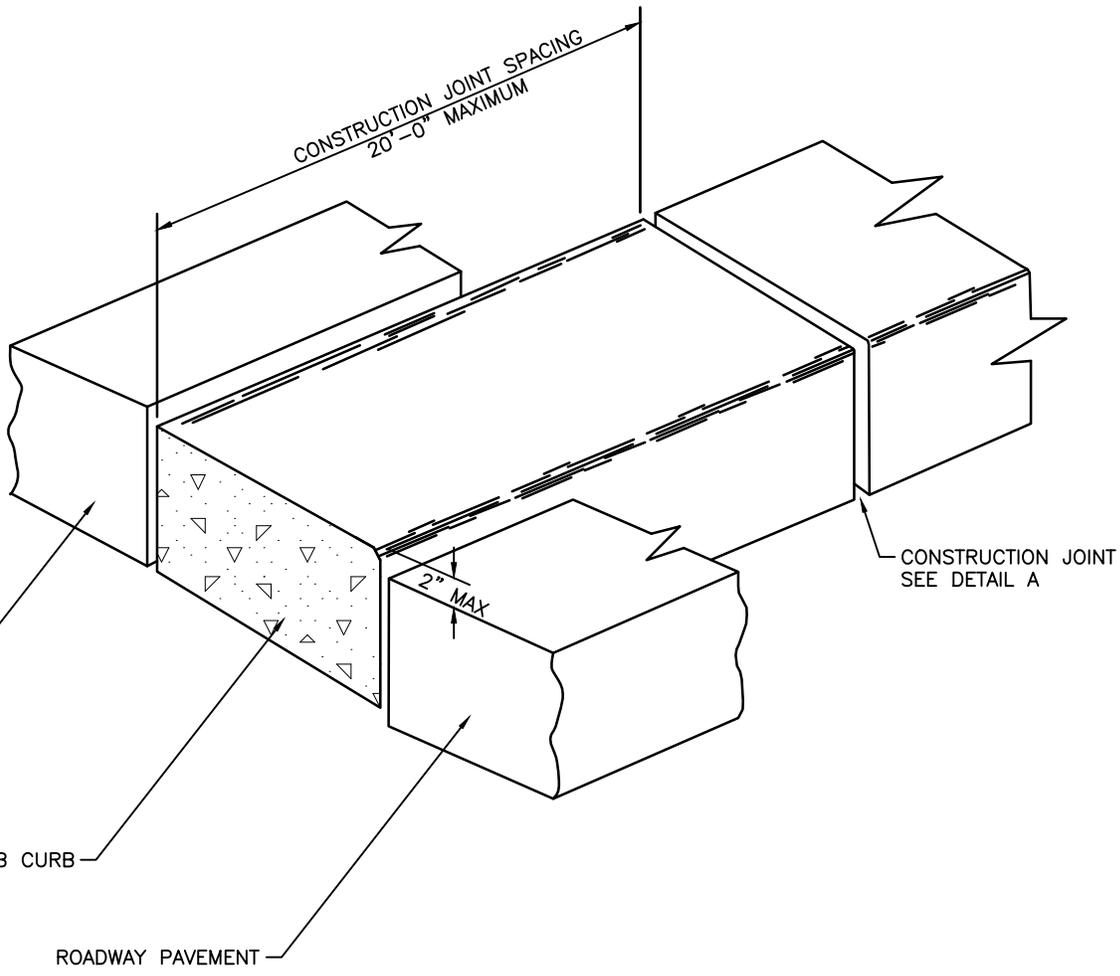


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DETAIL A
CONSTRUCTION JOINT



SD-06

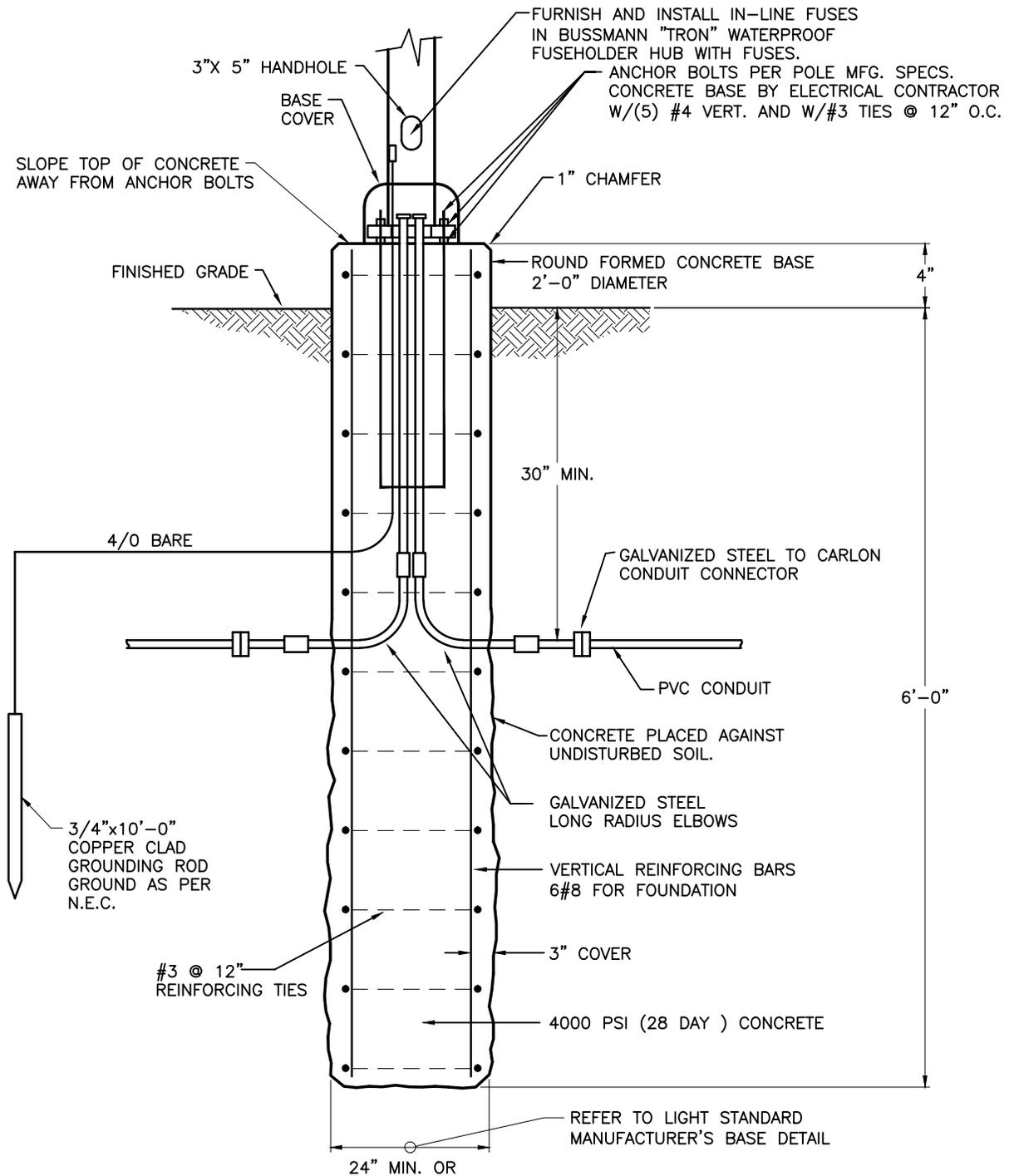
Concrete Mountable Curb

SCALE: N.T.S.

DATE: April 2016 FILE: SD-06 Concrete Mountable Curb.dwg



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LIGHT STANDARD BASE (35' POLE)

N. T. S.

SD-07

Light Standard Base

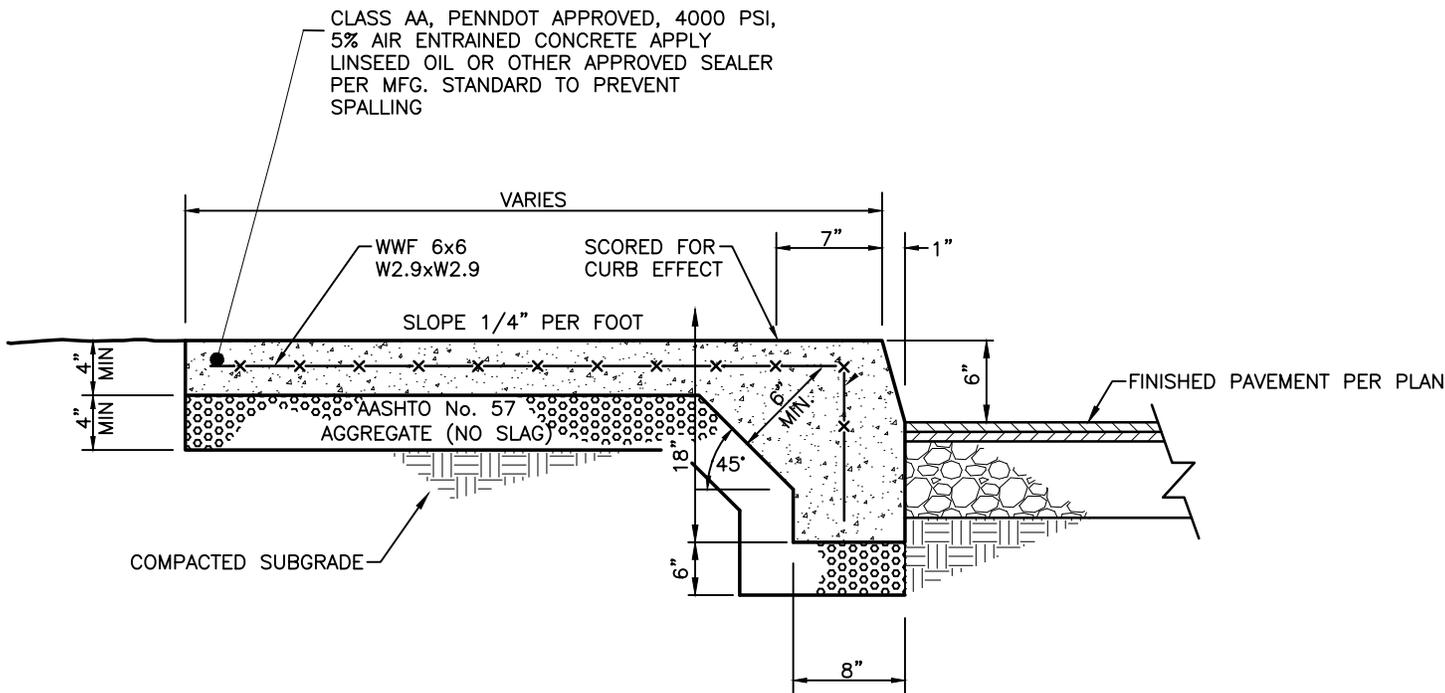
SCALE: N.T.S.

DATE: April 2016 FILE: SD-07 Type FC Foundation.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Site\SD-07_Integral Conc. Sidewalk and Curb.dwg Layout=Concrete Sidewalk Concrete Curb (Adj.to Parking Areas)



NOTES:

1. WALK SHALL BE CROSS SCORED EVERY FIVE FEET (5'). 1/2" PREFORMED EXPANSION JOINTS EVERY 20 FEET. WALK SHALL HAVE TROWELED EDGES WITH A STIFF BROOM FINISH.
2. IF A DRIVEWAY IS TO BE CONSTRUCTED OVER A SIDEWALK, THE CONCRETE SHALL BE PLACED AT 6" DEPTH.
3. PROVIDE TWO (2) No. 4 DOWELS AT PROPERTY LINES.
4. EXCAVATION, DEMOLITION OF EXISTING WALKWAY (IF ANY) AND SUBBASE ARE INCIDENTAL TO CONCRETE WALK CONSTRUCTION.
5. PROVIDE ADA CURB RAMPS AT ALL INTERSECTIONS.

SD-08

Integral Concrete Sidewalk And Concrete Curb

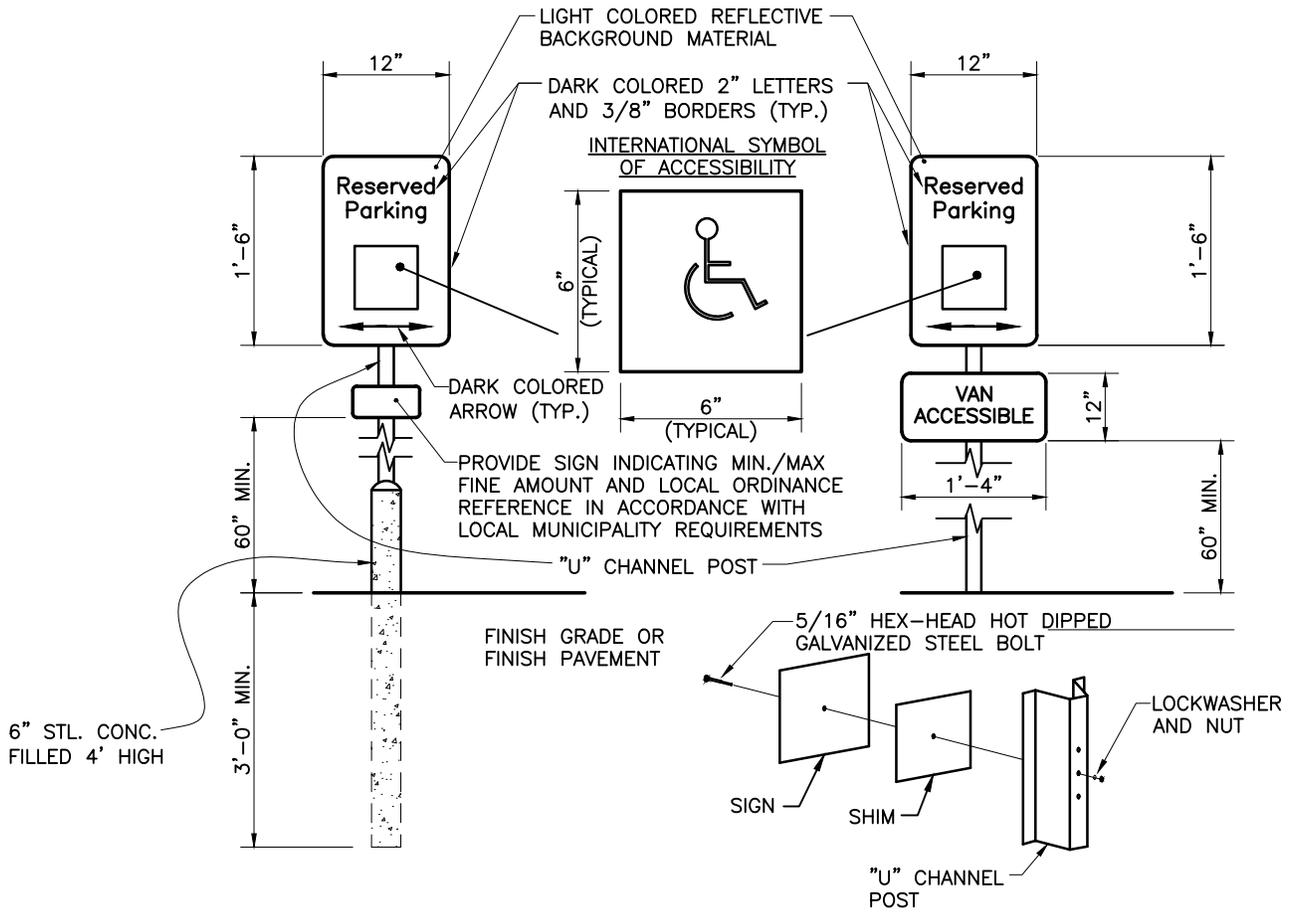
SCALE: N.T.S.

DATE: April 2016 FILE: SD-07 Integral Conc. Sidewalk And Curb.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Site\SD-09 ADA Parking Sign.dwg Layout=Accessible Parking Sign



NOTE:
 FINE AMOUNTS AND LOCAL ORDINANCE(S)
 SHALL BE POSTED ON SIGN. CONTACT
 LOCAL BUILDING INSPECTOR.

SD-09

Accessible Parking Sign

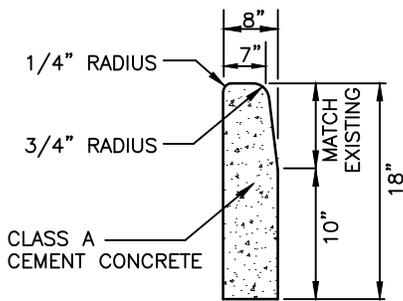
SCALE: N.T.S.

DATE: April 2016 FILE: SD-09 ADA Parking Sign.dwg

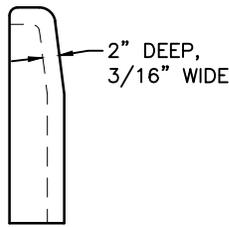


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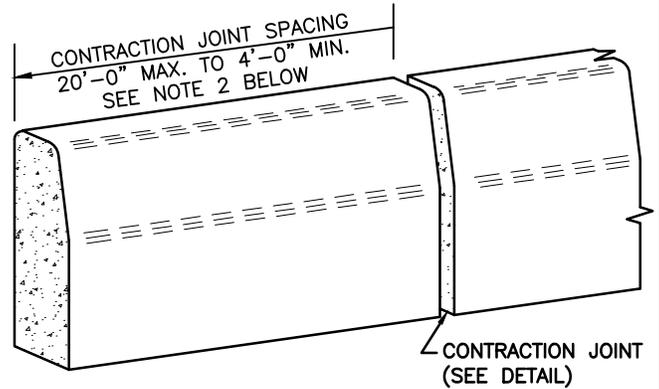
n:\PROJ\205\details\brighton_twp\dwg\Site\SD-10 Concrete Curb.dwg Layout=Concrete Curb



TYPICAL CROSS SECTION



CONTRACTION JOINT



PLAIN CEMENT CONCRETE CURB

NOTES:

1. PROVIDE MATERIALS AND CONSTRUCTION MEET THE REQUIREMENTS OF PUBLICATION 408, SECTION 630 FOR PLAIN CONCRETE CURB AND DEPRESSED CURB, SECTION 640 FOR PLAIN CONCRETE CURB AND FOR PLAIN CONCRETE CURB GUTTER.
2. SPACE CONTRACTION JOINS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE $\frac{3}{4}$ " PRE-MOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.
4. SEE RC-50 FOR PLAIN CONCRETE CURB SLOPED TOP TREATMENT AT END OF STRUCTURES

SD-10

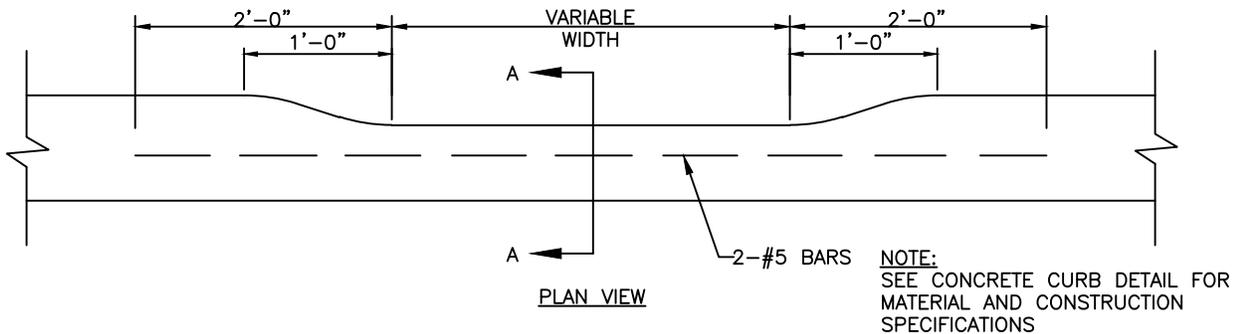
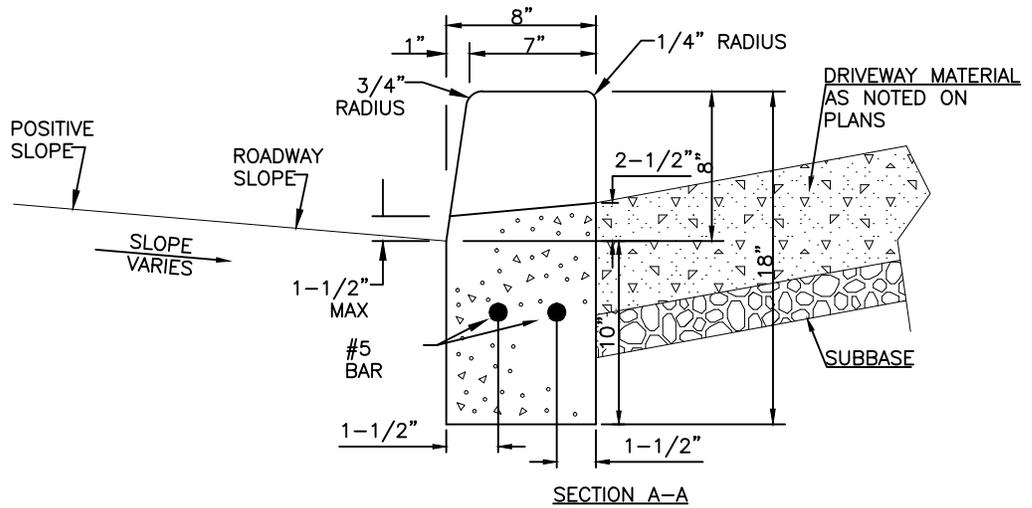
Concrete Curb

SCALE: N.T.S.

DATE: April 2016 FILE: SD-10 Concrete Curb.dwg



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SD-11

Depressed Concrete Curb

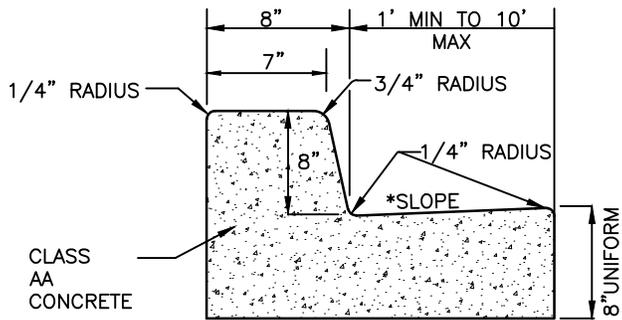
SCALE: N.T.S.

DATE: April 2016 FILE: SD-11 Depressed Concrete Curb.dwg



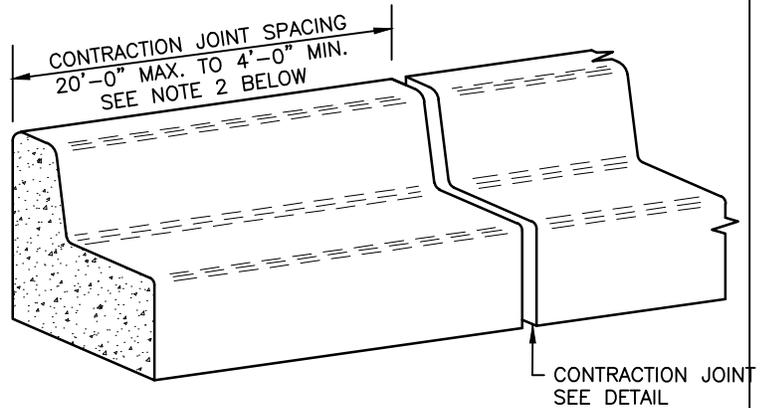
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n:\PROJ\205\details\brighton_twp\dwg\Site\SD-12 Concrete Curb with Gutter.dwg Layout=Concrete Curb with Gutter



*SLOPE
 - UNDER 5' GUTTER WIDTH USE 1" PER FT. MIN.
 - 5' AND GREATER GUTTER WIDTH USE 1/2" PER FT. MIN.

TYPICAL CROSS SECTION



PLAIN CONCRETE CURB GUTTER

NOTES:

1. PROVIDE MATERIALS AND CONSTRUCTION MEET THE REQUIREMENTS OF PUBLICATION 408, SECTION 630 FOR PLAIN CONCRETE CURB AND DEPRESSED CURB, SECTION 640 FOR PLAIN CONCRETE CURB AND FOR PLAIN CONCRETE CURB GUTTER.
2. SPACE CONTRACTION JOINS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE 3/4" PRE-MOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.
4. SEE RC-50 FOR PLAIN CONCRETE CURB SLOPED TOP TREATMENT AT END OF STRUCTURES

SD-12

Concrete Curb With Gutter

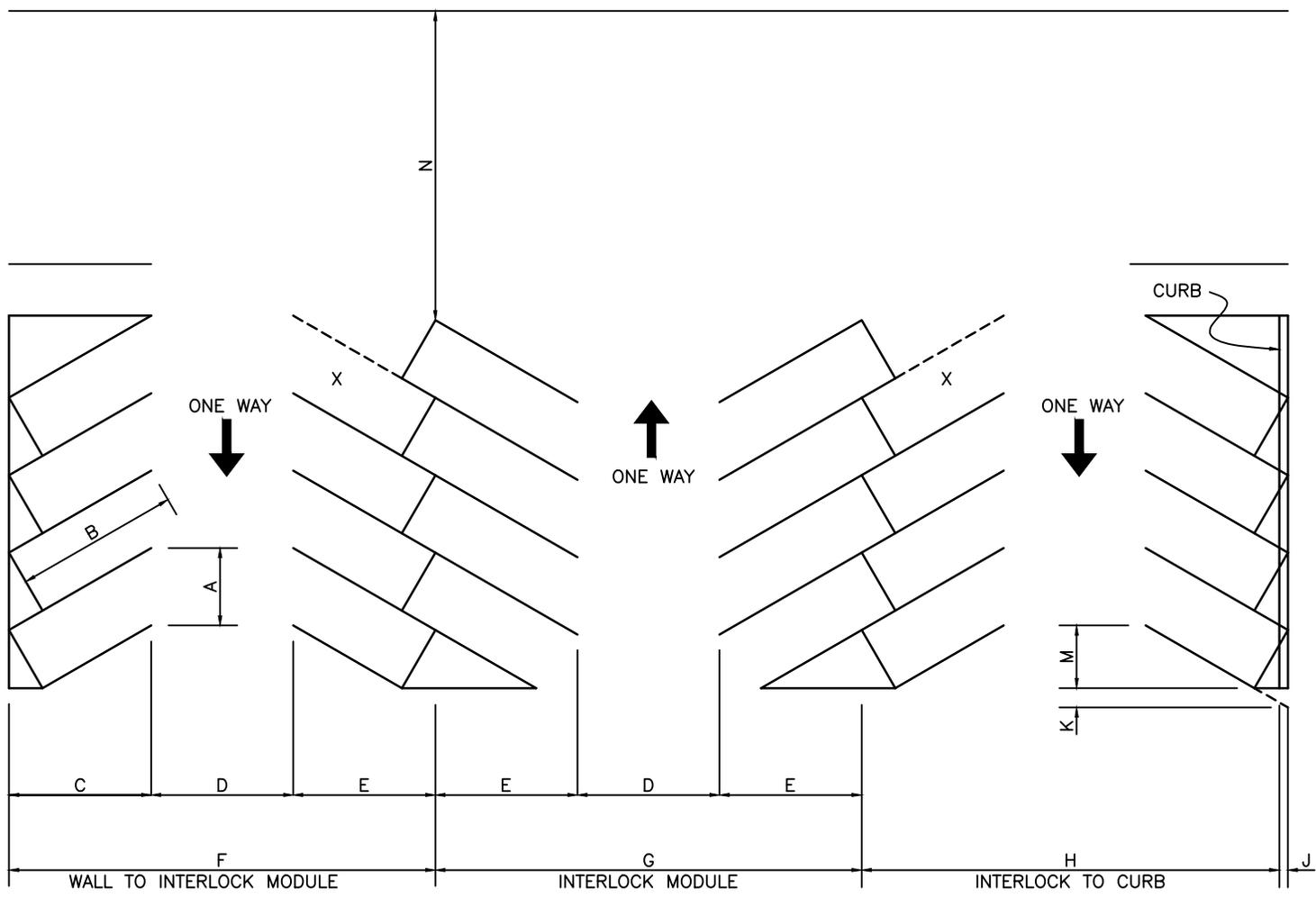
SCALE: N.T.S.

DATE: April 2016 FILE: SD-12 Concrete Curb With Gutter.dwg



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X = STALL NOT ACCESSIBLE IN CERTAIN LAYOUTS

PARKING LAYOUT DIMENSION (FEET) FOR 10' - 0" X 20' - 0" STALL AT VARIOUS ANGLES

DESCRIPTION	DIMENSION	45°	60°	70°	90°
STALL WIDTH, PARALLEL TO AISLE	A	14.1	11.6	10.6	10.0
STALL LENGTH OF LINE	B	29.6	23.1	23.4	20.0
STALL DEPTH OF WALL	C	20.9	22.0	22.0	20.0
AISLE WIDTH BETWEEN STALL LINES	D	12.0	18.0	20.0	24.0
STALL DEPTH INTERLOCK	E	17.9	19.8	20.5	20.0
MODULE WALL TO INTERLOCK	F	50.8	57.8	52.5	64.0
MODULE INTERLOCKING	G	47.8	55.6	61.0	64.0
MODULE INTERLOCKING TO CURB FACE	H	48.8	55.5	60.1	61.5
BUMPER OVERHANG	J	2.0	2.3	2.4	2.5
OFFSET	K	7.0	2.9	1.2	0.0
SETBACK	M	14.0	14.0	14.0	0.0
CROSS AISLE, ONE WAY	N	14.0	14.0	14.0	14.0
CROSS AISLE, ONE WAY	-	24.0	24.0	24.0	24.0

SD-13

Parking Lot Typical Layout

SCALE: N.T.S.

DATE: April 2016 FILE: SD-13 Parking Lot Typical Layout.dwg



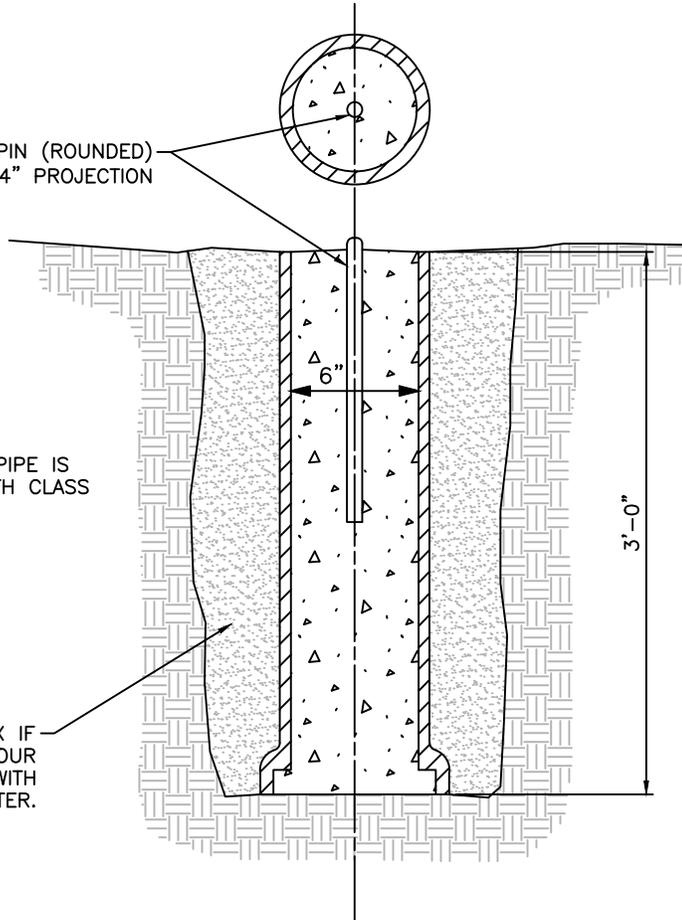
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#4 18" LONG IRON PIN (ROUNDED)
WITH 1/4" PROJECTION

NOTE:

6" PVC SCH 40 PIPE IS
TO BE FILLED WITH CLASS
"A" CONCRETE

BACKFILL WITH DRY MORTAR MIX IF
PRECAST MONUMENT IS USED. POUR
IN MORTAR MIX AND FLOOD WITH
WATER.



SD-14

Survey Monument

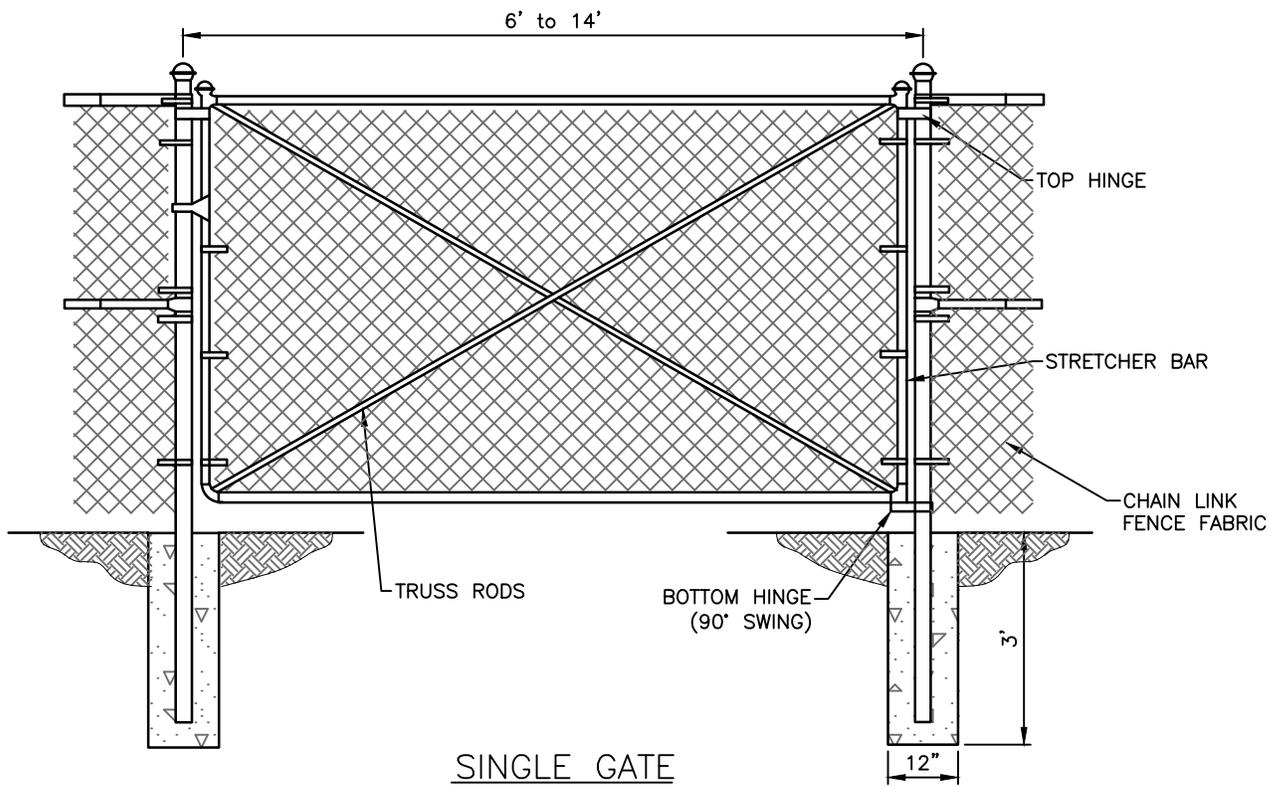
SCALE: N.T.S.

DATE: April 2016 FILE: SD-14 Survey Monument.dwg



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SD-15

4' High Chain Link Fence Single Gate

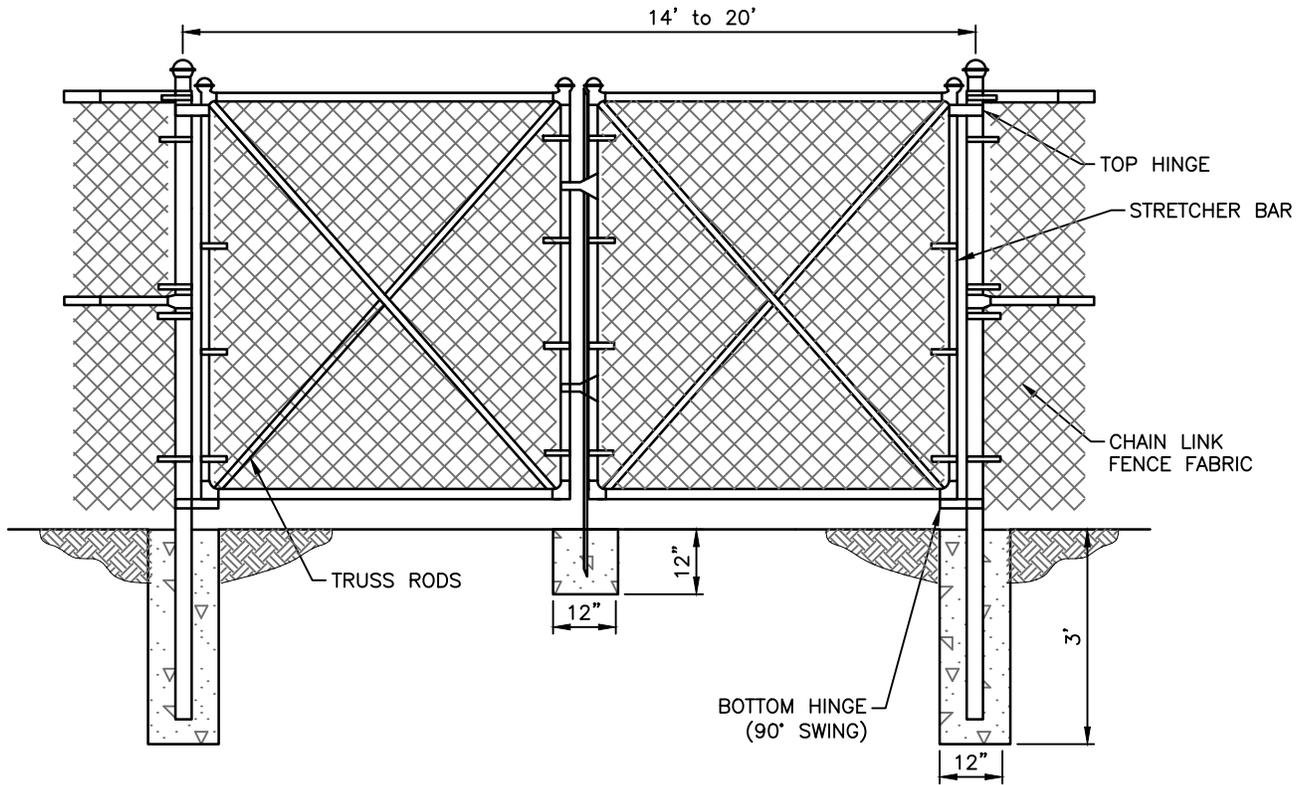
SCALE: N.T.S.

DATE: April 2016 FILE: SD-15 4' High Chain Link Fence Single Gate.dwg



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DOUBLE GATE

CONCRETE SHALL BE CLASS 3000. CONCRETE FOR LINE POSTS TO BE 9" MIN. DIAMETER. CONCRETE FOR ALL OTHER POSTS TO BE 12" MIN. DIAMETER.

THIS DRAWING REQUIRES SUPPORTING TECHNICAL DOCUMENTATION PRIOR TO USE AND MUST BE ADAPTED TO THE SPECIFIC SITE.

SD-16

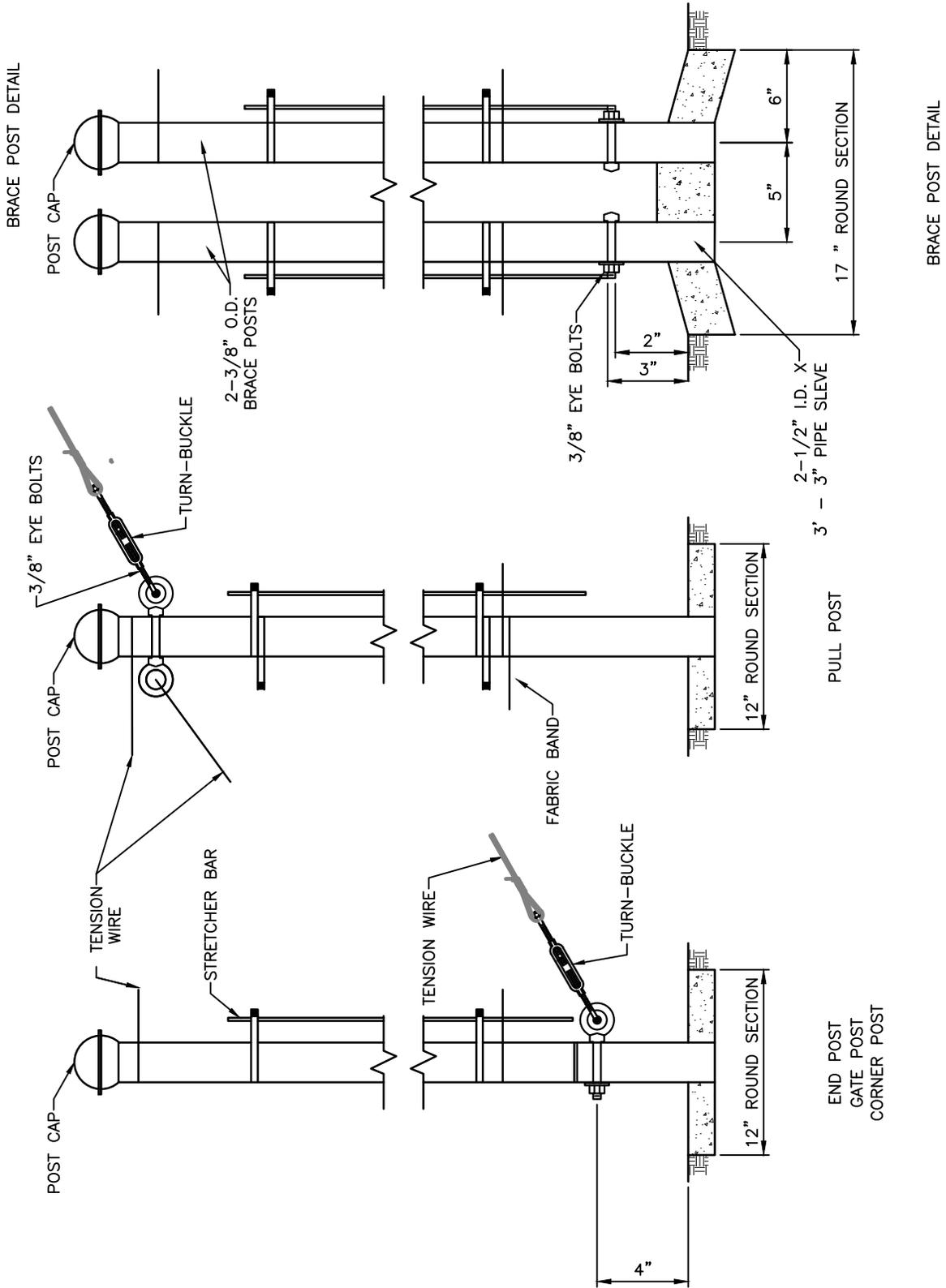
4' High Chain Link Fence Double Gate

SCALE: N.T.S.

DATE: April 2016 FILE: SD-16 4' High Chain Link Fence Double Gate.dwg



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4' High Chain Link Fence Post

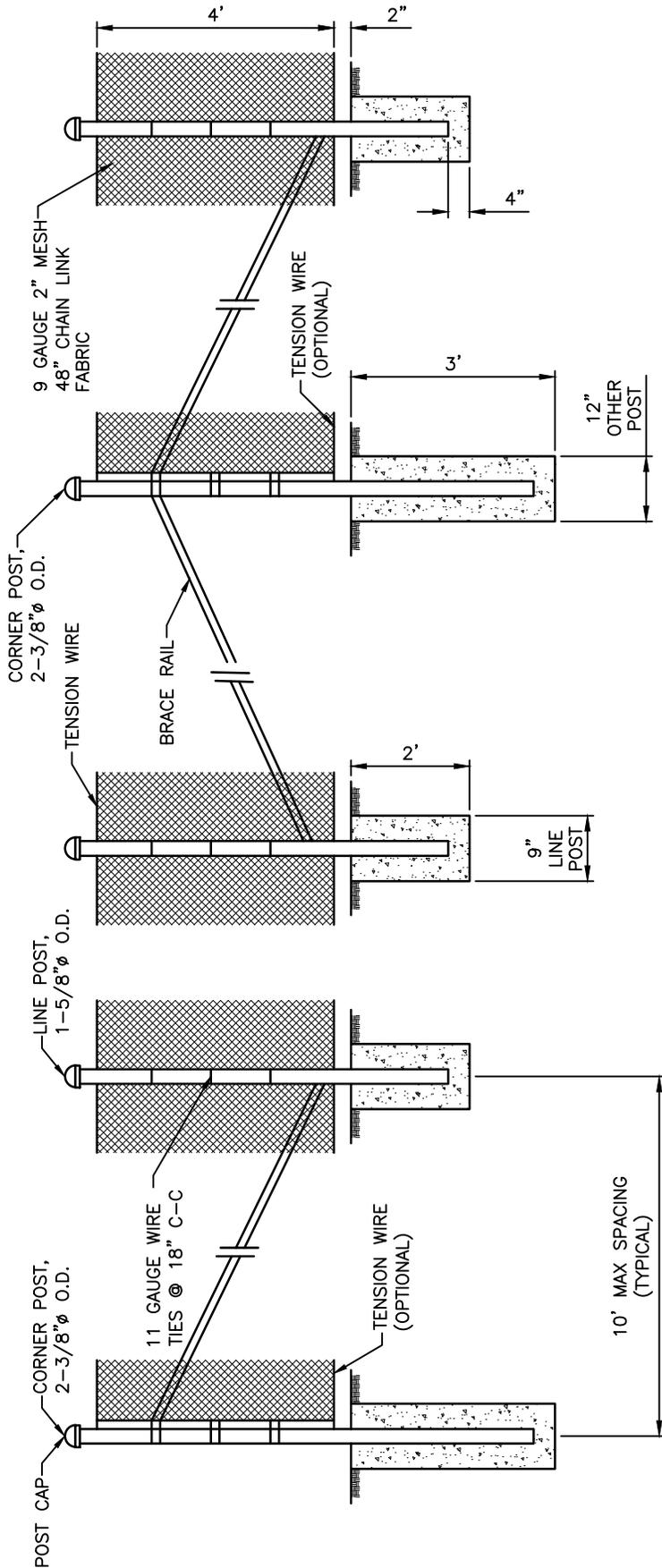
SD-17

SCALE: N.T.S.

DATE: April 2016 FILE: SD-17 4' High Chain Link Fence Post.dwg



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CONCRETE SHALL BE CLASS 3000. CONCRETE FOR LINE POSTS TO BE 9" MIN. DIAMETER. CONCRETE FOR ALL OTHER POSTS TO BE 12" MIN DIAMETER.

THIS DRAWING REQUIRES SUPPORTING TECHNICAL DOCUMENTATION PRIOR TO USE AND MUST BE ADAPTED TO THE SPECIFIC SITE

ELEVATION VIEW

SD-18

4' High Chain Link Fence

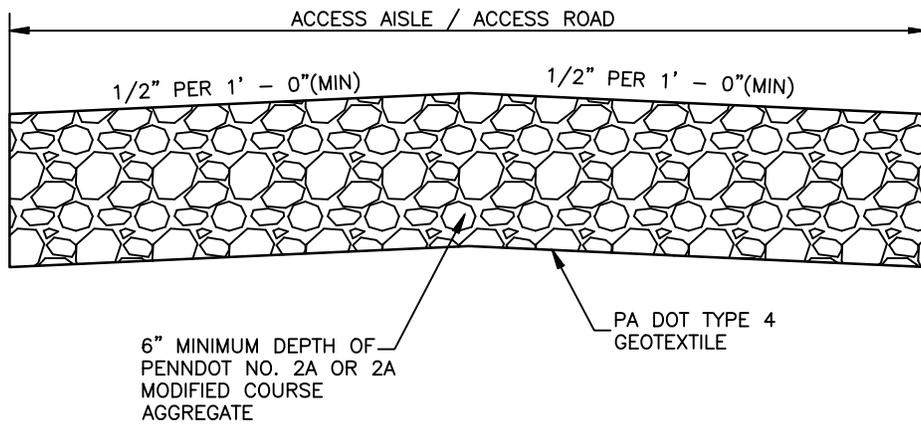
SCALE: N.T.S.

DATE: April 2016 FILE: SD-18 4' High Chain Link Fence.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Site\SD-20 Junk Yard Access Road.dwg Layout=Auto. Recycling and Material Salvage Access Road Section



SD-19

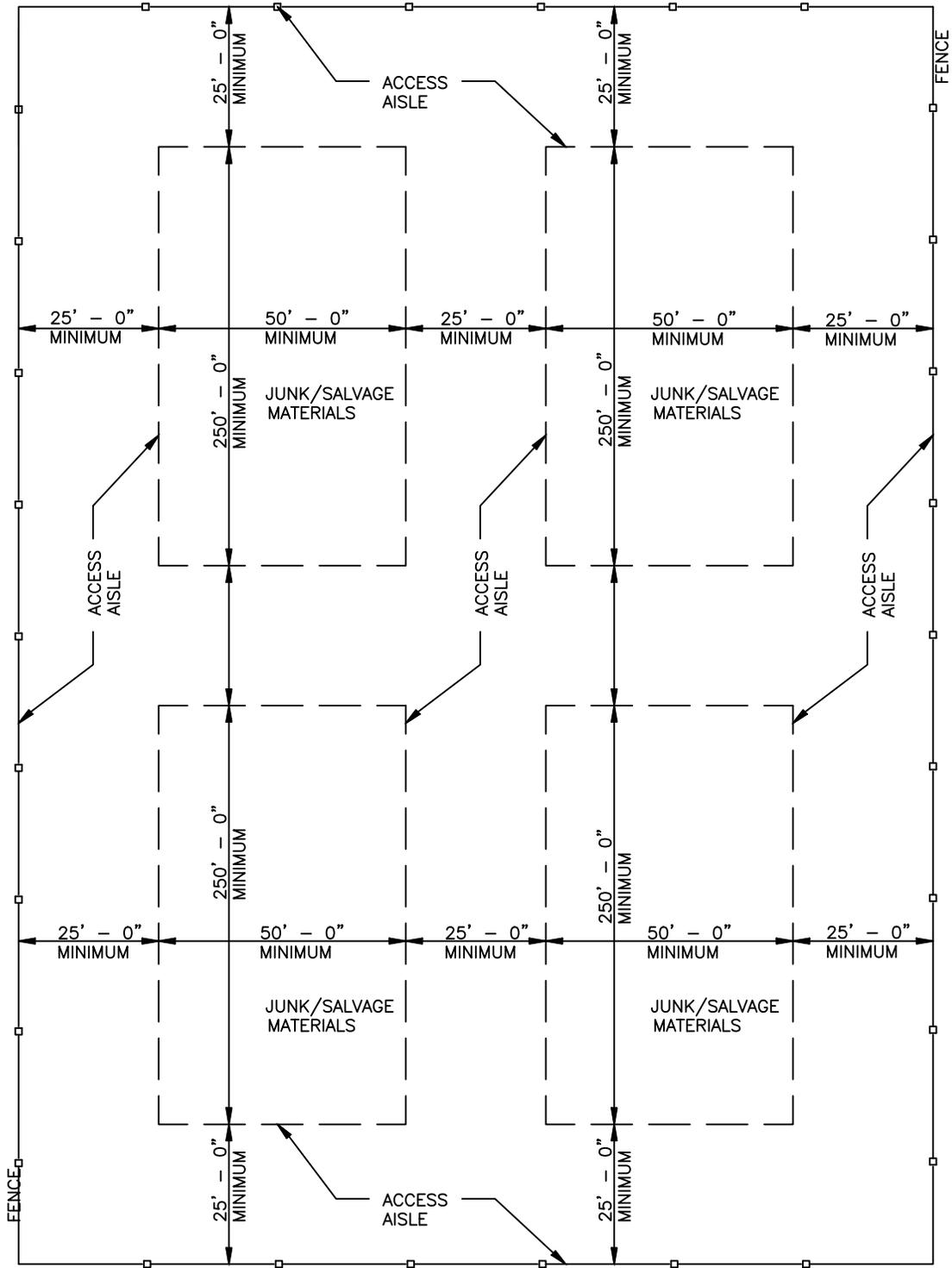
Auto. Recyclng And Material Salvage Access Road Section

SCALE: N.T.S.

DATE: April 2016 FILE: SD-20 Junk Yard Access Road.dwg



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SD-20

Auto. Recylcing And Material Salvage Access Aisle Layout

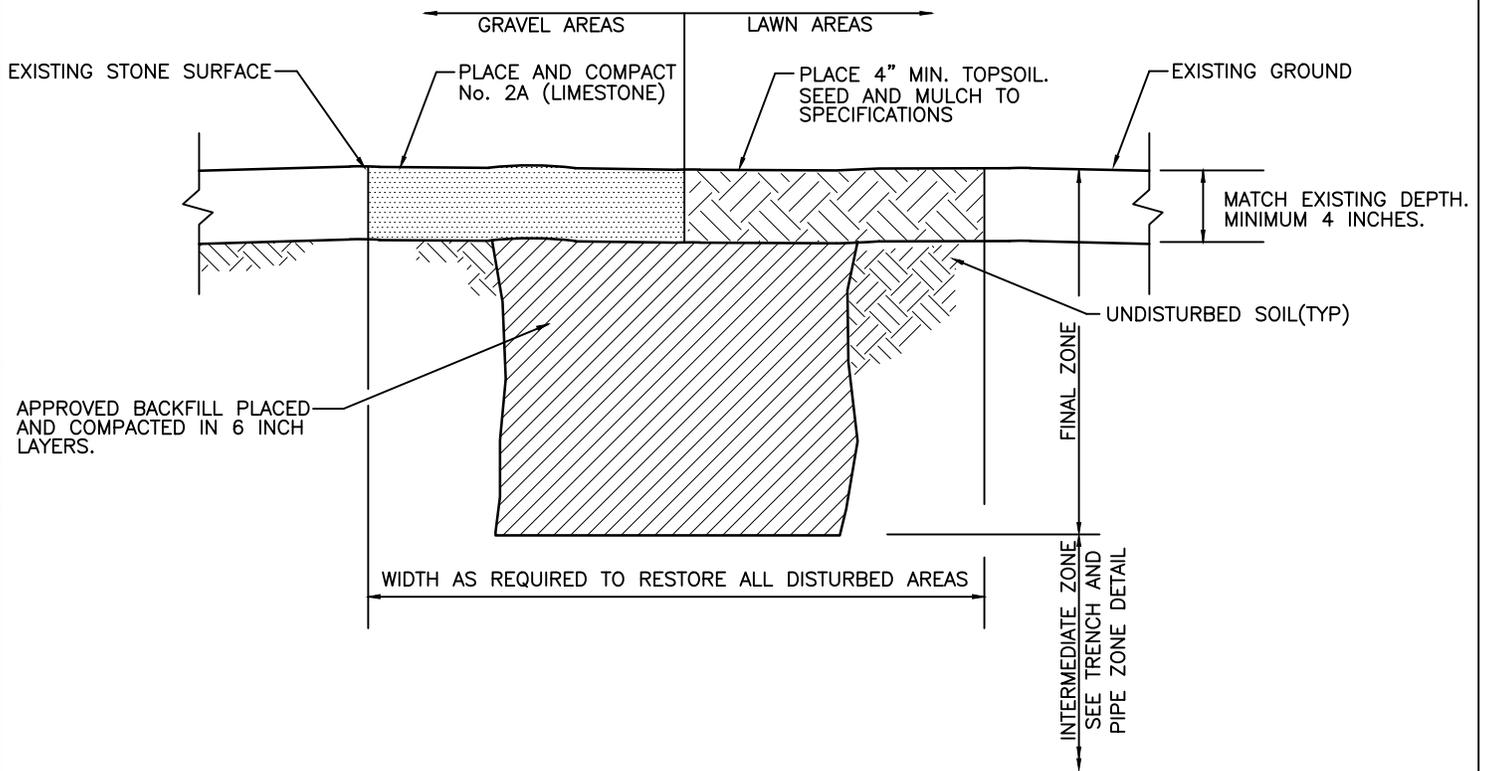
SCALE: N.T.S.

DATE: April 2016 FILE: SD-19 Junk Yard Access Aisle Layout.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Site\SD-21_Unimproved Area Surface Restoration.dwg Layout=Unimproved Area Surface Restoration



SD-21

Unimproved Area Surface Restoration

SCALE: N.T.S.

DATE: April 2016 FILE: SD-21 Unimproved Area Surface Restoration.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Site\SD-22 Single Or Multiuse Business Sign.dwg Layout=Single or Multi-Use Business Signs Maximum Sign Face Area

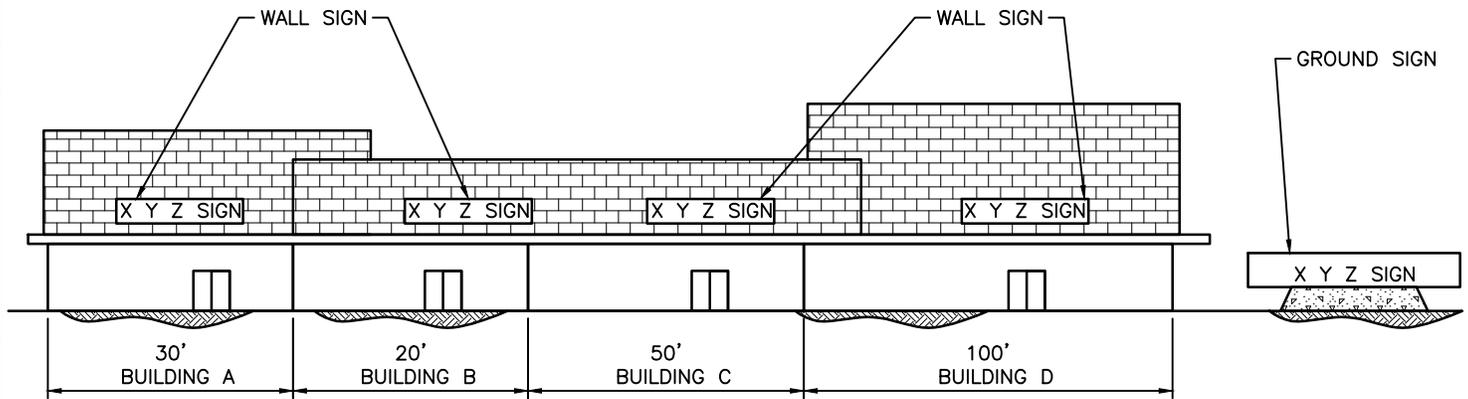
MAXIMUM WALL SIGN SIGN FACE AREA PER BUILDING – MULTI-USE BUSINESS BUILDING

(BUILDING WIDTH x 0.75) TO A MAXIMUM OF 75 SF

BUILDING	BUILDING WIDTH (FT.)	MAXIMUM SIGN FACE AREA (SF)	WALL SIGN SIZE (FT.)
A	30 (x 0.75)	22.5	3 x 7.5
B	20 (x 0.75)	15.0	3 x 5.0
C	50 (x 0.75)	37.5	3 x 12.5
D	100 (x 0.75)	75.0	3 x 25

MAXIMUM GROUND SIGN SIGN FACE AREA – MULTI-USE BUSINESS BUILDING

MAXIMUM SIGN FACE AREA =
(BUILDING WIDTH x 0.35) TO A MAXIMUM OF 50 SF



(MULTI-USE BUILDING)

SD-22

Single Or Multi-Use Business Signs Maximum Sign Face Area

SCALE: N.T.S.

DATE: April 2016 FILE: SD-22 Single Or Multiuse Business Sign.dwg



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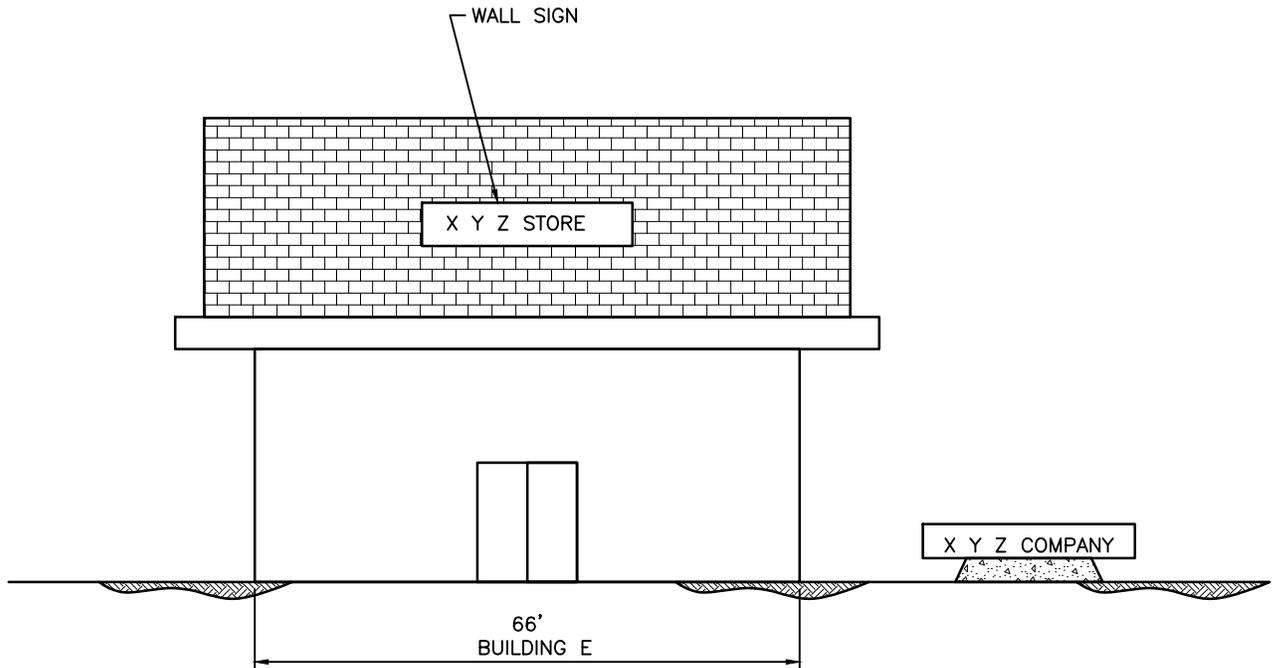
MAXIMUM WALL SIGN FACE AREA PER BUILDING – SINGLE USE BUSINESS BUILDING

(BUILDING WIDTH x 0.75) TO A MAXIMUM OF 75 SF

BUILDING	BUILDING WIDTH (FT.)	MAXIMUM SIGN FACE AREA (SF)	WALL SIGN SIZE (FT.)
E	66 (x 0.75)	49.5	3 x 16.5

MAXIMUM GROUND SIGN FACE AREA – SINGLE USE BUSINESS BUILDING

MAXIMUM GROUND SIGN FACE AREA =
(BUILDING WIDTH x 0.35) TO A MAXIMUM OF 50 SF



(SINGLE-USE BUILDING)

SD-23

Single Business Signs Maximum Sign Face Area

SCALE: N.T.S.

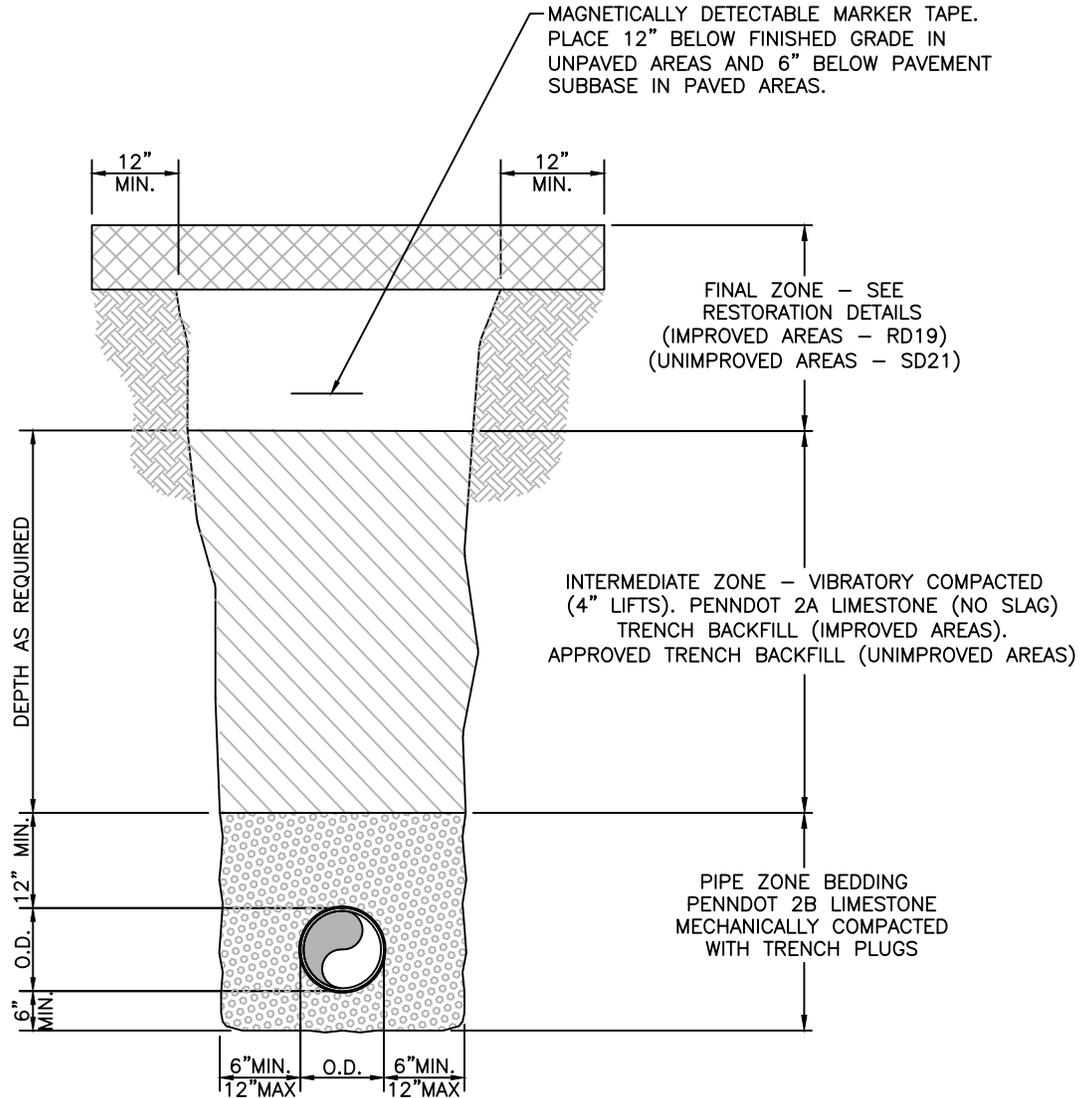
DATE: April 2016 FILE: SD-23 Single Use Business Signs.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Site\SD-23 Single Use Business Signs.dwg Layout=Single Business Signs Maximum Sign Face Area

n:\PROJ\205\details\brighton_twp\dwg\Storm Sewer\SS-01 Storm Sewer Trench - Within ROW.dwg Layout=Storm Sewer Trench & Pipe Zones



NOTE:

1. 100% PENNDOT 2A LIMESTONE BACKFILL IS REQUIRED WHEN LOCATED WITHIN 4 FEET FROM THE EDGE OF PAVEMENT

SS-01

Storm Sewer Trench & Pipe Zones

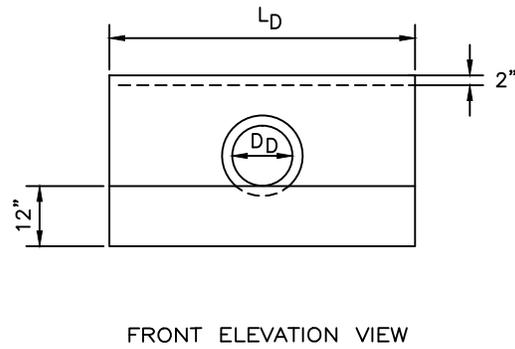
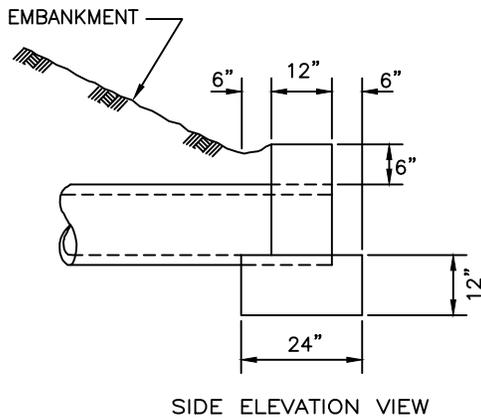
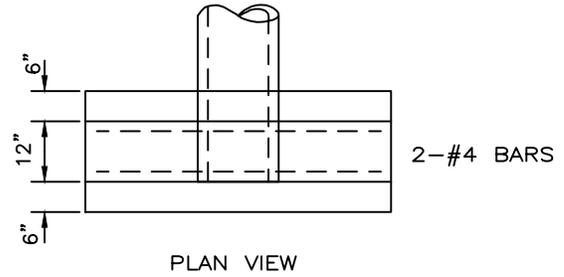
SCALE: N.T.S.

DATE: April 2016 FILE: SS-01 Storm Sewer Trench - Within ROW.dwg



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DIAMETER PIPE	L _D
18" AND 21"	5'
24" AND 27"	7'
30" AND 36"	9'



NOTES:

1. CONSTRUCT ENDWALL IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 408, SECTION 605, FOR CAST-IN-PLACE UNITS AND SECTION 714 FOR PRECAST CEMENT CONCRETE UNITS.
2. FURNISH AND INSTALL ENDWALLS IN ACCORDANCE WITH PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION - RC-31M.
3. ONLY PRECAST ENDWALLS SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.

SS-02

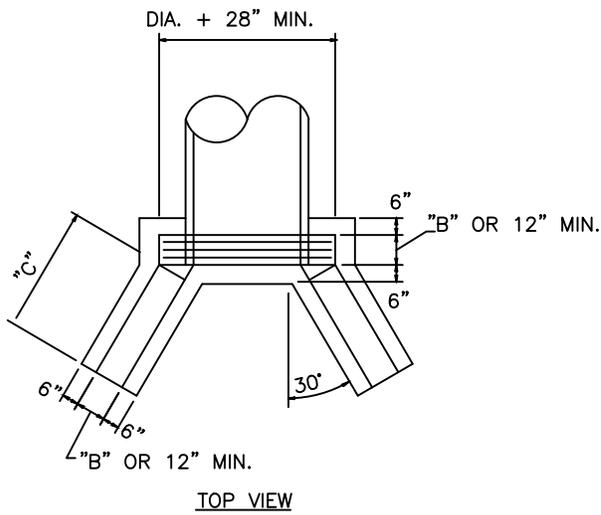
Type D Endwall

SCALE: N.T.S.

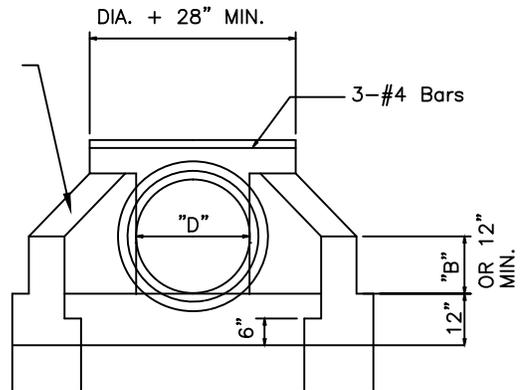
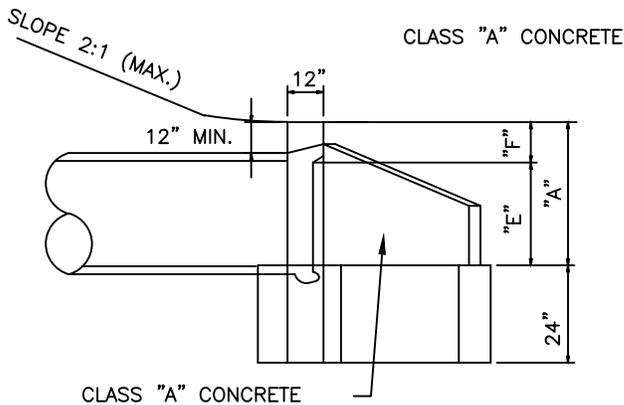
DATE: April 2016 FILE: SS-02 Type D Endwall.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009



PIPE DIA.	"A"	"B"	"C"	"D"	"E"	"B"
15"	2'-6"	9"	2'-0"	12"	1'-9"	9"
18"	2'-6"	9"	2'-0"	12"	2'-0"	9"
24"	3'-3"	9"	2'-0"	12"	2'-6"	9"
30"	4'-0"	12"	2'-6"	15"	3'-0"	12"
36"	4'-6"	12"	2'-6"	15"	3'-6"	12"
42"	5'-3"	15"	4'-3"	18"	4'-0"	15"
48"	5'-9"	15"	4'-9"	21"	4'-6"	15"
54"	6'-3"	15"	5'-3"	24"	5'-0"	15"
60"	7'-0"	15"	5'-9"	2'-3"	5'-6"	15"
66"	7'-6"	15"	7'-0"	2'-6"	6'-0"	15"
72"	8'-0"	18"	7'-0"	2'-6"	6'-6"	18"
84"	9'-0"	18"	8'-3"	2'-9"	7'-6"	18"



SIDE VIEW

END VIEW

NOTES:

1. CONSTRUCT ENDWALL IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 408, SECTION 605, FOR CAST-IN-PLACE UNITS AND SECTION 714 FOR PRECAST CEMENT CONCRETE UNITS.
2. FURNISH AND INSTALL ENDWALLS IN ACCORDANCE WITH PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION - RC-31M.
3. ONLY PRECAST ENDWALLS SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.
4. EXPOSED EDGES SHALL BE CHAMFERED ONE (1) INCH.

SS-03

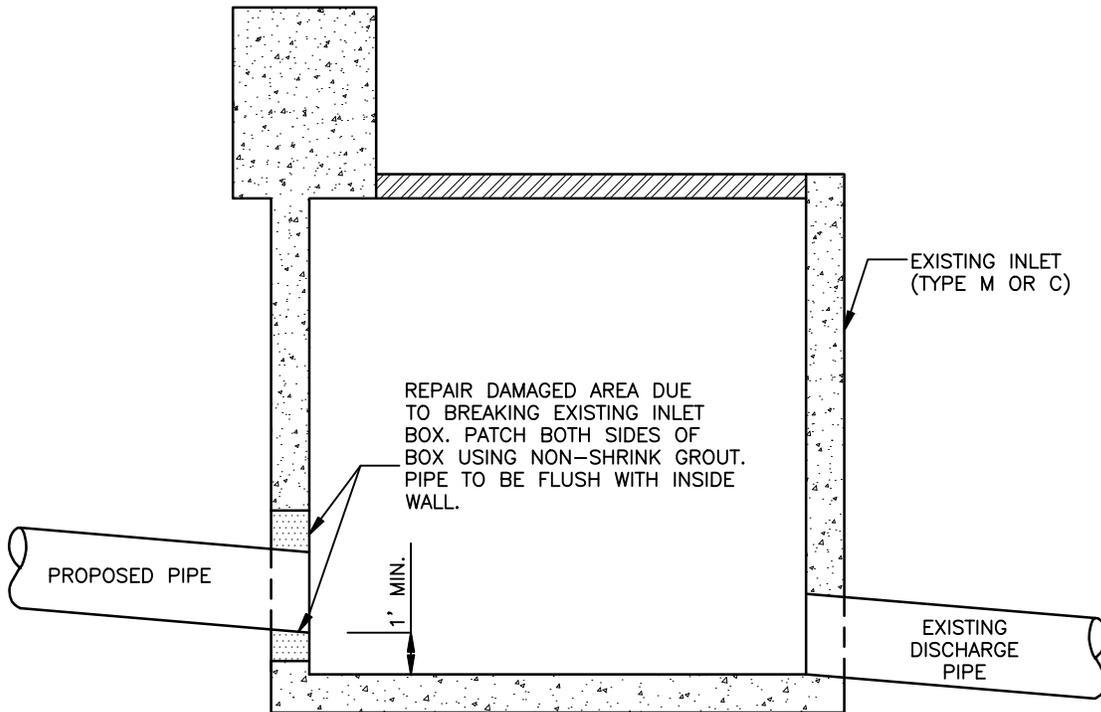
Type DW Endwall

SCALE: N.T.S.

DATE: April 2016 FILE: SS-03 Type DW Endwall.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009



SS-04

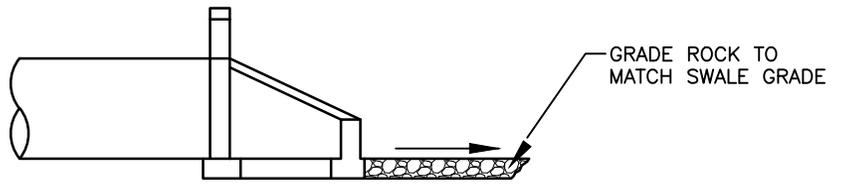
Inlet Connections

SCALE: N.T.S.

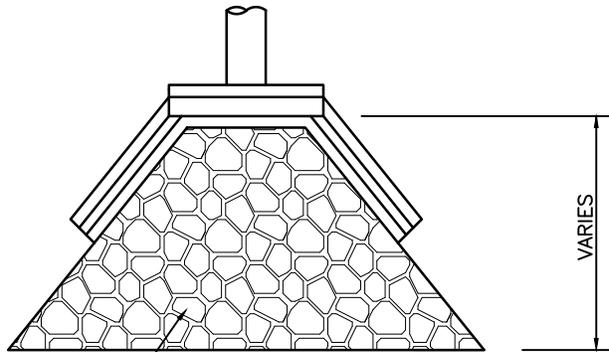
DATE: April 2016 FILE: SS-04 Inlet Connection.dwg



Brighton Township
Beaver County, Pennsylvania
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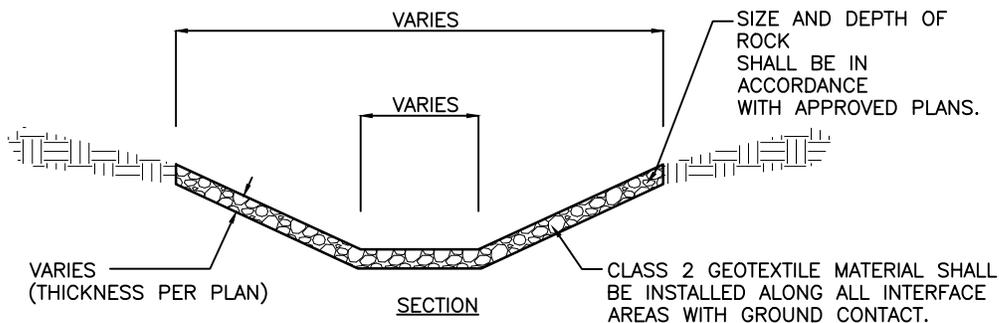


PROFILE



SIZE AND DEPTH OF ROCK SHALL BE IN ACCORDANCE WITH APPROVED PLANS.

PLAN



VARIES (THICKNESS PER PLAN)

*OR APPROVED EQUAL

SECTION

SS-05

Rip-Rap Storm Sewer Outfall

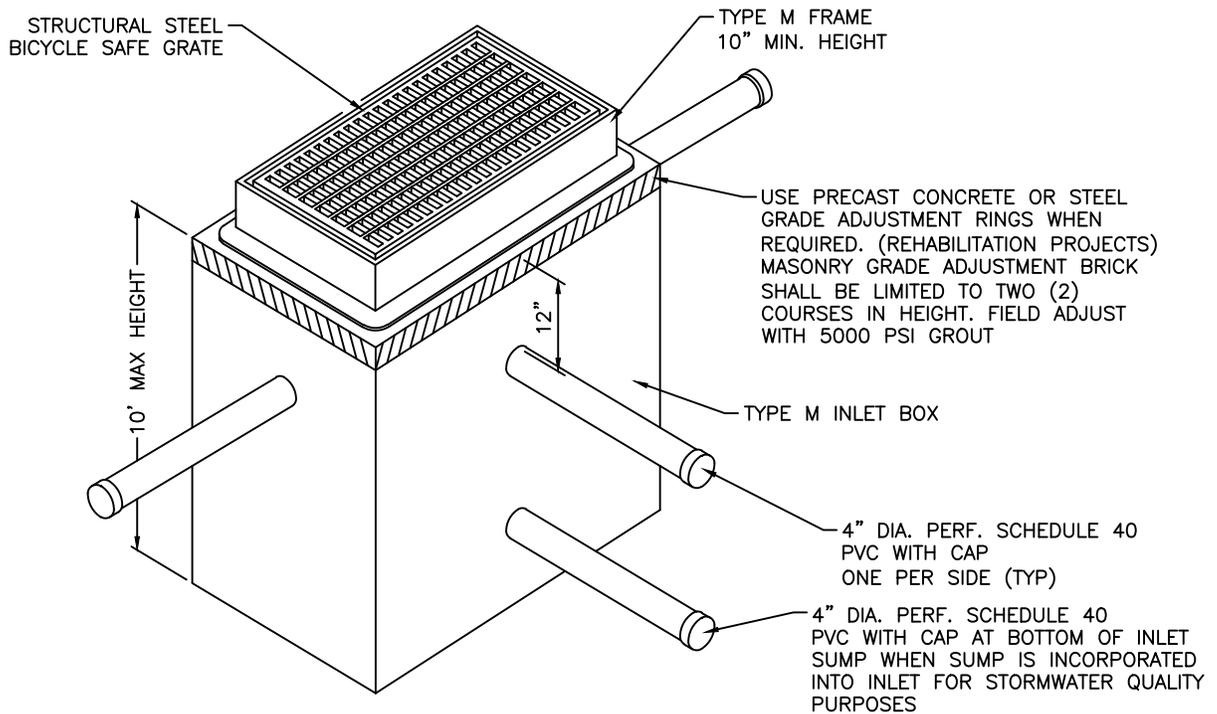
SCALE: N.T.S.

DATE: April 2016 FILE: SS-05 Riprap Outfall.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009

n:\PROJ\205\details\brighton_twp\dwg\Storm Sewer\SS-05 Riprap Outfall.dwg Layout=Rip-Rap Storm Sewer Outfall



INLET BOX NOTES:

1. Construct inlet box in accordance with the requirements of PennDOT Publication 408, Section 605, for Cast-in-Place units and Section 714 for Precast Cement Concrete units.
2. Furnish and install inlet boxes, connections, joints, steps, and other appurtenances and details in accordance with PennDOT Publication 72M Standards for Roadway Construction, latest edition – RC-46M, Inlet Box with Type M Frame. Provide Inlet Type of smallest dimension to accommodate connected pipe openings in accordance with this Publication.
3. Only precast inlet boxes supplied by a manufacturer listed in PennDOT Bulletin 15 will be permitted.
4. Inlets that exceed the maximum height, as shown, are not permitted without approval by the Township. A specific design will be required for review and approval.
5. Do not extend pipe block-outs into the base when base is not monolithic with the inlet walls.
6. Locate pipe or pipes, as required, with the inlet bottom shaped to channel the flow toward the outlet pipe.
7. Brick or concrete block inlets shall not be permitted.
8. Storm sewer drop connections from invert of outflow pipe to invert of inflow pipes shall be a maximum of 2 ft.

TYPE M FRAME NOTES:

1. Furnish and install cast iron or structural steel Type M Frames in accordance with the requirements of PennDOT Publication 72M Standards for Roadway Construction, latest edition – RC-45M, Type M Frame, except that the frame must have a minimum 10" height.
2. Only frames supplied by a manufacturer listed in PennDOT Bulletin 15 will be permitted.
3. Concrete frames are permitted outside of paved areas. Provide concrete frames per PennDOT Publication 72M, RC-45M.

INLET GRATE NOTES:

1. Furnish and install structural steel bicycle safe inlet grates in accordance with the requirements of PennDOT Publication 72M Standards for Roadway Construction, latest edition – RC-45M, Structural Steel Grate Bicycle Safe.
2. Vane grates may be used only with permission from the Township. Vane grates (if permitted) must be Type "L" only (bicycle safe). If permission to use vane grates is granted by the Township, furnish and install vane grates in accordance with the requirements of PennDOT Publication 72M Standards for Roadway Construction, latest edition – RC-45M, Cast Iron Vane Grate.
3. Cast iron grates may be used only with permission from the Township. Do not use cast iron grates within the travel lanes. If these grates are permitted by the Township, they must be located at the edge of outside shoulders, swales, wide median swales and infield areas that are outside the travel lanes or curb to curb roadways.
4. Only grates supplied by a manufacturer listed in PennDOT Bulletin 15 will be permitted.

SS-06

Type M Inlet, Frame And Grate

SCALE: N.T.S.

DATE: April 2016 FILE: SS-06 Type M Inlet.dwg



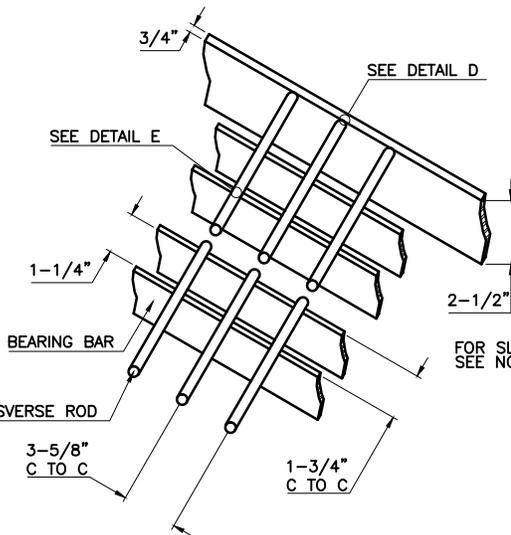
Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009

n:\PROJ\205\details\brighton_twp\dwg\Storm_Sewer\SS-07 Bike Safe Grate.dwg Layout=Structural Steel Bicycle Safe Grate

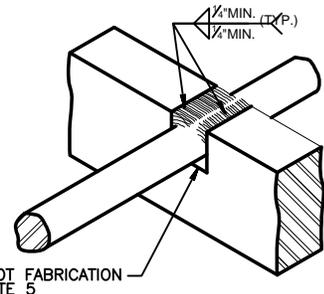
GENERAL NOTES

1. THIS SHEET DEPICTS THE DIMENSIONS REQUIRED FOR UNIFORMITY AND INTERCHANGEABILITY. IT DOES NOT INCLUDE DETAILS REQUIRED FOR FABRICATION OR MANUFACTURING. ONLY GRATES SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 SHALL BE PERMITTED. FOR A BULLETIN 15 LISTING, SUBMIT A 22" X 36" REPRODUCIBLE SHOP DRAWING TO THE BUREAU OF CONSTRUCTION AND MATERIALS, MATERIALS AND TESTING DIVISION FOR REVIEW AND APPROVAL.
2. WELD STRUCTURAL STEEL GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 1105.03 (R).
3. PROVIDE TRANSVERSE BARS, MEETING THE REQUIREMENT OF PUBLICATION 408.
4. PROVIDE BICYCLE-SAFE, STRUCTURAL STEEL OR CAST IRON VANE GRATES FOR INSTALLATION ONLY WHERE BICYCLE TRAFFIC IS ANTICIPATED, SUCH AS CURBED

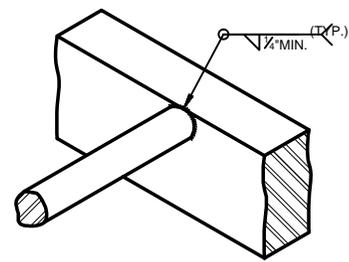
- ROADWAYS IN URBAN AREAS OR ROADWAYS SPECIFICALLY ESTABLISHED AND SIGNED AS BIKEWAYS OR BIKE LANES. ALTERNATE BICYCLE-SAFE GRATE DESIGNS SHALL REQUIRE A SHOP DRAWING SUBMISSION, AS SPECIFIED IN NOTE 1, AND SHALL CONFORM TO THE DIMENSIONAL REQUIREMENTS FOR PROPER INSTALLATION WITH THE CURRENT CONCRETE TOP UNITS.
5. FABRICATE SLOTS BY BURNING, DRILLING, SHEARING OR PUNCHING. HAVE THE BOTTOM OF ALL BURNED OR DRILLED SLOTS CONFORM TO THE SHAPE OF THE ROD.
6. PROVIDE STRUCTURAL STEEL GRATES WITH THE GRATE SPACERS LOCATED FLUSH ALONG THE TOP SURFACE OF THE GRATE.
7. DO NOT USE CAST IRON GRATES WITHIN THE TRAVEL LANES. THESE GRATES ARE PERMITTED AT THE EDGE OF OUTSIDE SHOULDERS, SWALES, WIDE MEDIUM SWALES AND INFIELD AREAS THAT ARE OUTSIDE THE TRAVEL LANES OR CURB TO CURB ROADWAYS.



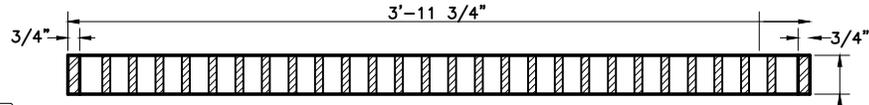
BAR AND ROD SPACING DETAIL



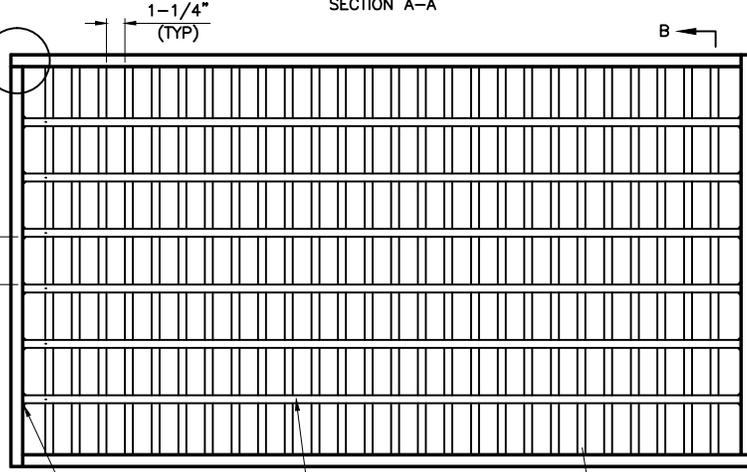
DETAIL E



DETAIL D

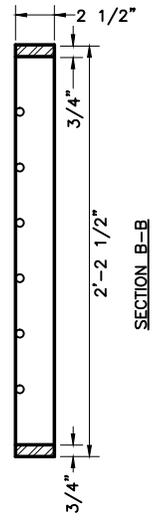


SECTION A-A

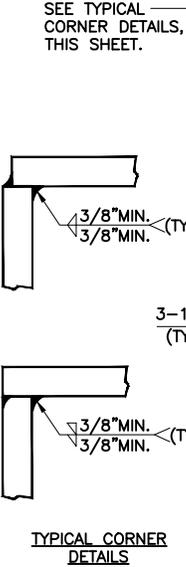


6 TRANSVERSE RODS AT 3-5/8" C. TO C. (TYP)
3/8" Ø x 46-1/4" ROD

26 BEARING RODS AT 1-3/4" C. TO C. (TYP)
1/2" X 2-1/2" X 25" BAR



SECTION B-B



TYPICAL CORNER DETAILS

SS-07

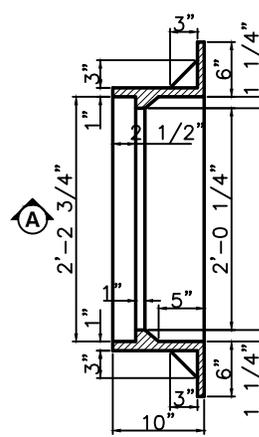
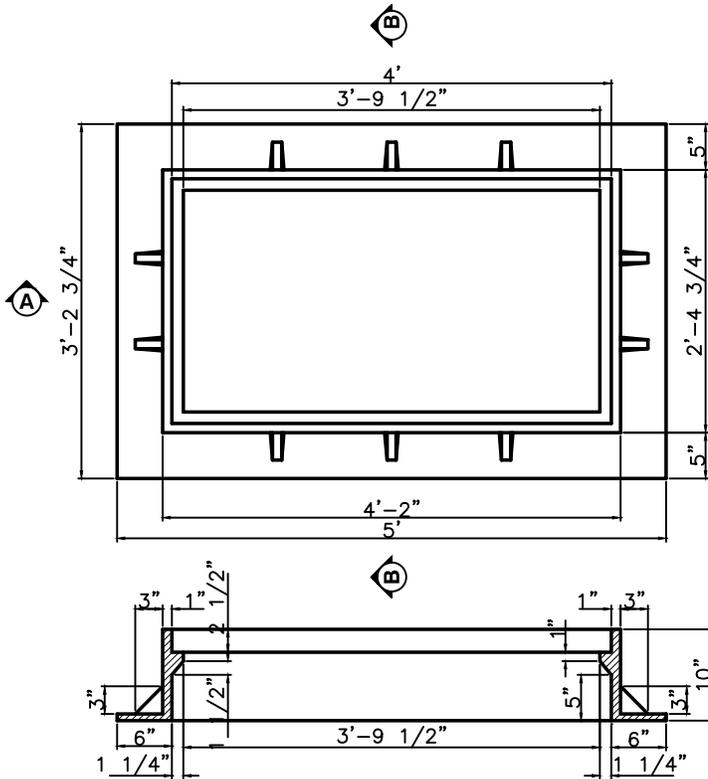
Structural Steel Bicycle Safe Grate

SCALE: N.T.S.

DATE: April 2016 FILE: SS-07 Bike Safe Grate.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009



NOTES:

1. THIS STANDARD DEPICTS THE DIMENSIONS REQUIRED FOR UNIFORMITY AND INTERCHANGEABILITY. IT DOES NOT INCLUDE DETAILS REQUIRED FOR FABRICATION AND MANUFACTURING. ONLY ITEMS SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 WILL BE PERMITTED.
2. PROVIDE EITHER GRAY, MALLEABLE OR DUCTILE IRON CASTINGS OR STRUCTURAL STEEL FRAMES.
3. WELD STRUCTURAL STEEL GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 1105.03(r). WELDING SHOPS ARE NOT REQUIRED TO BE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) CERTIFIED.
4. FURNISH AND INSTALL FRAMES IN ACCORDANCE WITH THE REQUIREMENTS OF PennDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION - RC-45M.
5. CONCRETE FRAMES ARE NOT PERMITTED.
6. SOURCE: PA DOT STANDARDS FOR ROADWAY CONSTRUCTION (LATEST EDITION).

SS-08

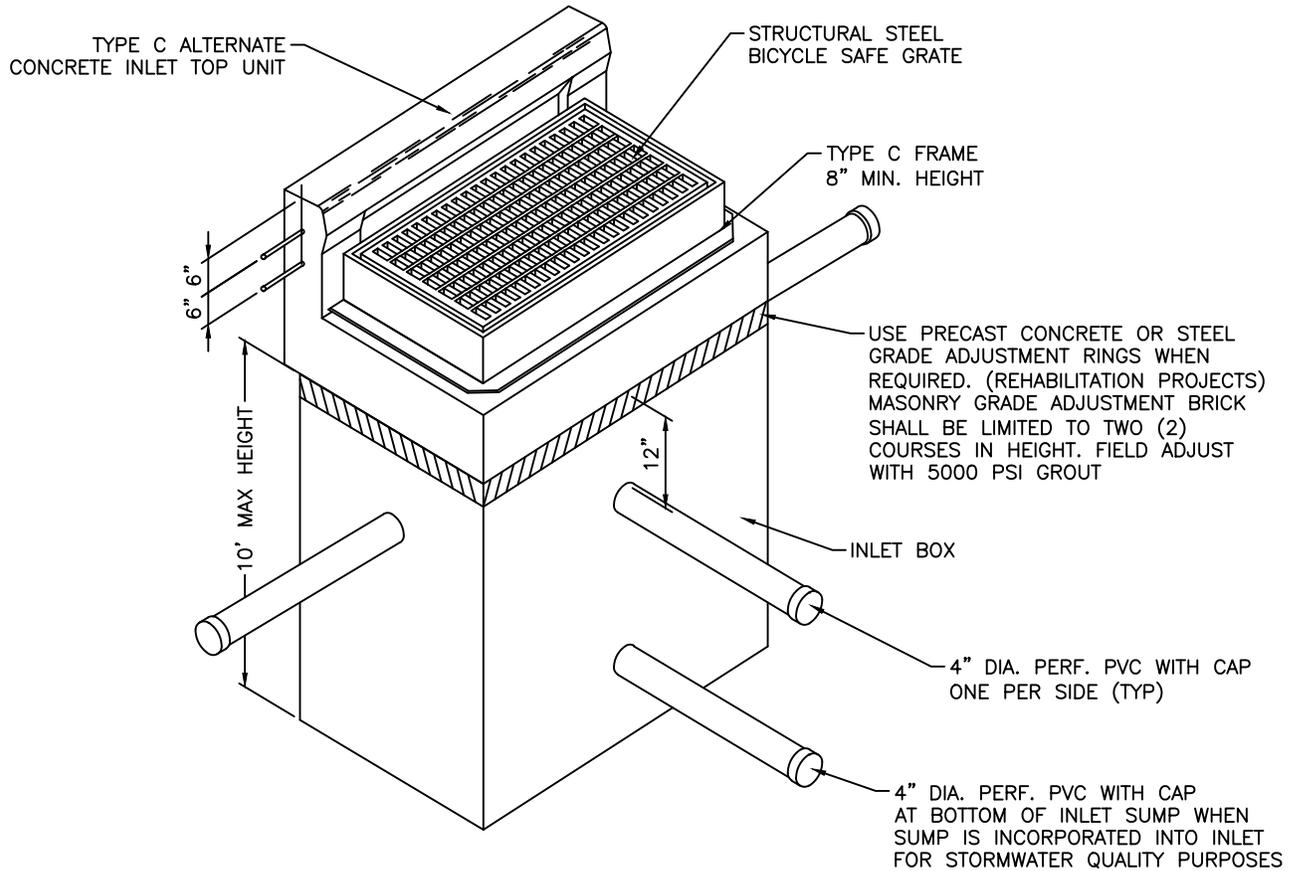
Type 'M' Inlet Frame

SCALE: N.T.S.

DATE: April 2016 FILE: SS-08 Type M Inlet Frame.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009



INLET BOX NOTES:

1. Construct inlet box in accordance with the requirements of PennDOT Publication 408, Section 605, for Cast-in-Place units and Section 714 for Precast Cement Concrete units.
2. Furnish and install inlet boxes, connections, joints, steps, and other appurtenances and details in accordance with PennDOT Publication 72M Standards for Roadway Construction, latest edition – RC-46M, Inlet Box with Concrete Top Unit – Type C Alternate With Type C Frame. Provide Inlet Type of smallest dimension to accommodate connected pipe openings in accordance with this Publication.
3. Only precast inlet boxes supplied by a manufacturer listed in PennDOT Bulletin 15 will be permitted.
4. Inlets that exceed the maximum height, as shown, are not permitted without approval by the Township. A specific design will be required for review and approval.
5. Do not extend pipe block-outs into the base when base is not monolithic with the inlet walls.
6. Locate pipe or pipes, as required, with the inlet bottom shaped to channel the flow toward the outlet pipe.
7. Brick or concrete block inlets shall not be permitted.
8. Storm sewer drop connections from invert of outflow pipe to invert of inflow pipes shall be a maximum of 2 ft.

TYPE M FRAME NOTES:

1. Furnish and install Type C Alternate Concrete Top Unit and cast iron or structural steel Type C Frames in accordance with the requirements of PennDOT Publication 72M Standards for Roadway Construction, latest edition – RC-45M.
2. Only top units and frames supplied by a manufacturer listed in PennDOT Bulletin 15 will be permitted.

INLET GRATE NOTES:

1. Furnish and install structural steel bicycle safe inlet grates in accordance with the requirements of PennDOT Publication 72M Standards for Roadway Construction, latest edition – RC-45M, Structural Steel Grate Bicycle Safe.
2. Vane grates may be used only with permission from the Township. If permission to use vane grates is granted by the Township, furnish and install vane grates in accordance with the requirements of PennDOT Publication 72M Standards for Roadway Construction, latest edition – RC-45M, Cast Iron Vane Grate.
3. Cast iron grates may be used only with permission from the Township. Do not use cast iron grates within the travel lanes. If these grates are permitted by the Township, they must be located at the edge of outside shoulders, swales, wide median swales and infield areas that are outside the travel lanes or curb to curb roadways.
4. Only grates supplied by a manufacturer listed in PennDOT Bulletin 15 will be permitted.

SS-09

Type C Inlet, Frame And Grate

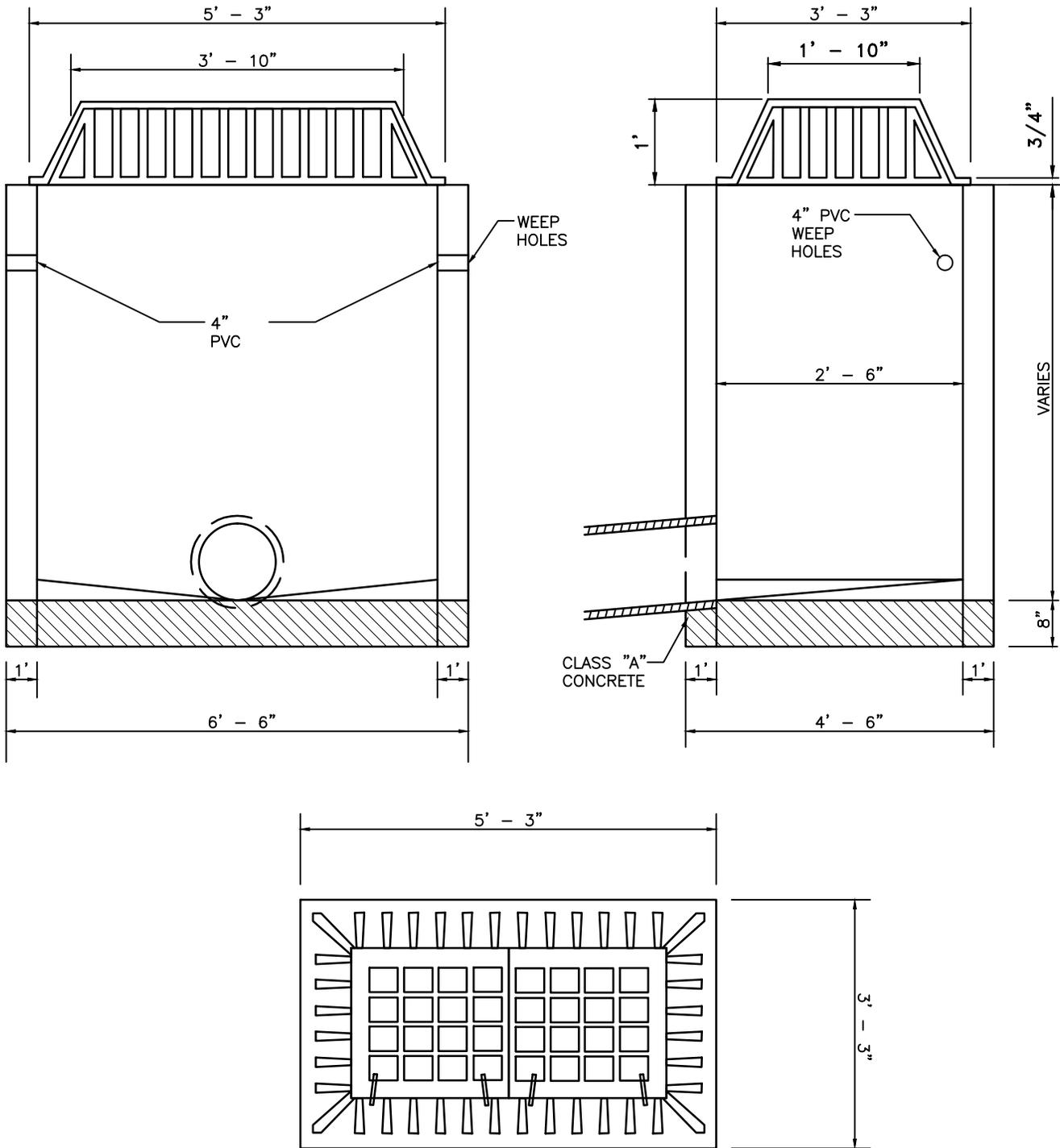
SCALE: N.T.S.

DATE: April 2016 FILE: SS-09 Type C Inlet.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009

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SS-10

Yard Drains

SCALE: N.T.S.

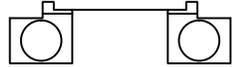
DATE: April 2016 FILE: SS-10 Yard Drains.dwg

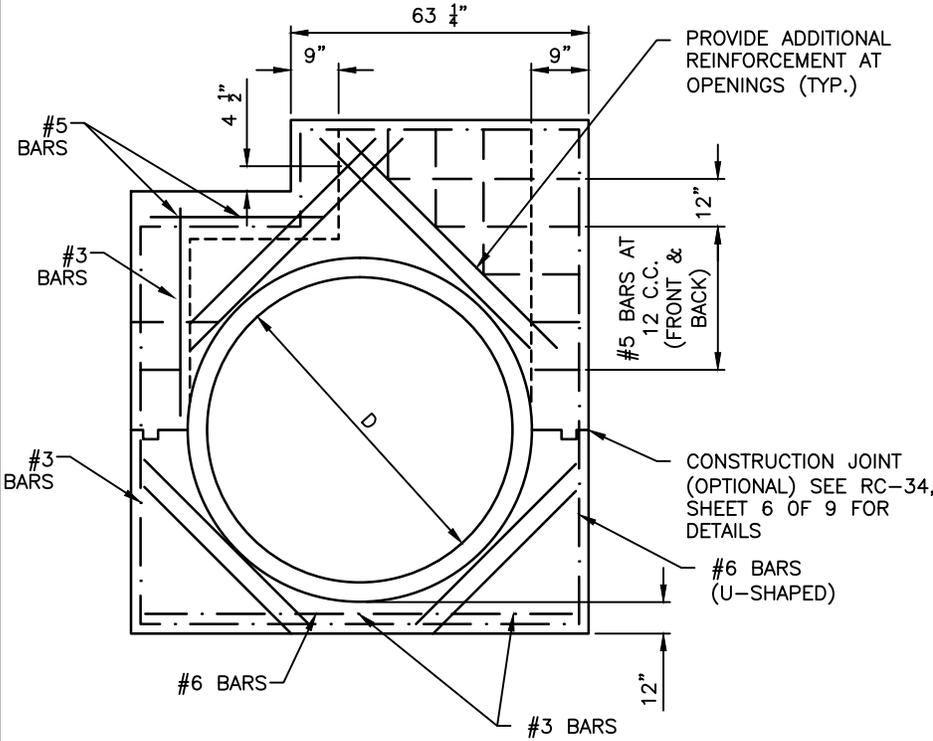


Brighton Township
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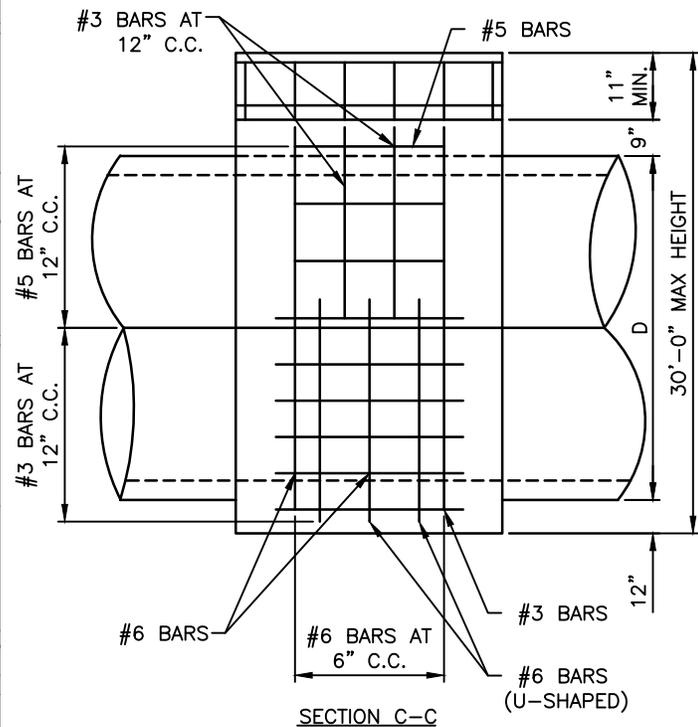
n:\PROJ\205\details\brighton_twp\dwg\Storm_Sewer\SS-11_Modified Type II Box.dwg Layout=Modified Type II Inlet Box

NOTES:

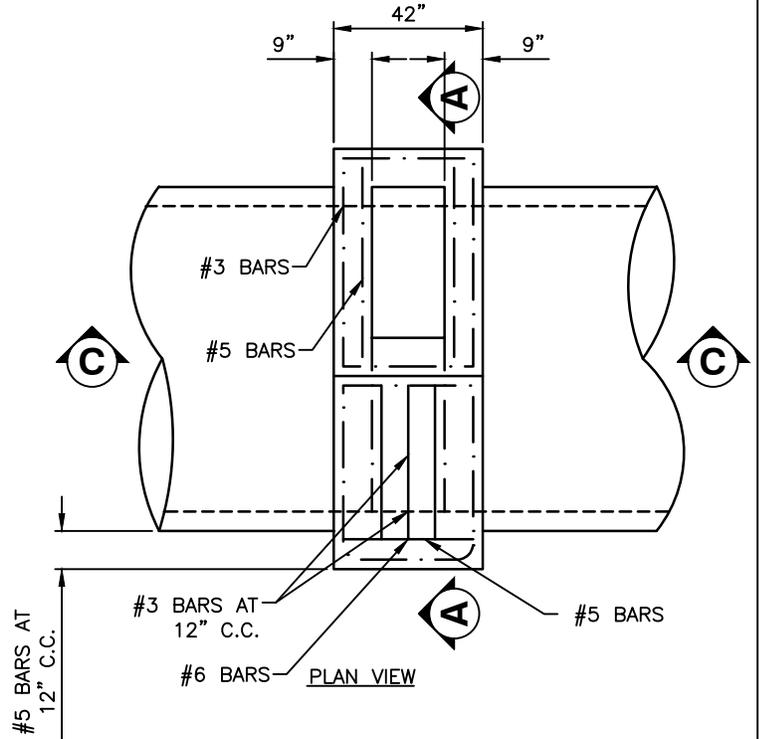
1. CONSTRUCT IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 605 AND SECTION 714.
 2. INLETS THAT EXCEED THE MAXIMUM HEIGHT SHOWN SHALL REQUIRE SPECIAL DETAILS AND DESIGN FOR THE INLET WALLS AND BASE. CONSTRUCT INLETS THAT EXCEED 5 FEET IN HEIGHT WITH STEPS SIMILAR TO MANHOLES. SEE RC-39.
 3. WHEN A SITUATION CAN BE SATISFIED BY THE MODIFIED INLET BOXES SHOWN, SPECIAL DETAILS AND DESIGN SHOULD BE PROVIDED.
 4. FOR ORIENTATION OF THE TYPE C INLET WITH THE MODIFIED TYPE I INLET BOX. THE TYPICAL INSTALLATION DETAILS ARE SHOWN BELOW. ANY VARIATION SHALL BE SHOWN ON THE CONSTRUCTION DRAWINGS BY SPECIAL DETAILS.
- 
5. PROVIDE A MINIMUM HEIGHT OF 20 INCHES MEASURED FROM THE TOP SURFACE OF THE TOP UNIT TO THE INSIDE TOP OF THE PIPE WHEN THE TOP UNIT AND EITHER A MODIFIED TYPE I OR A MODIFIED TYPE II INLET BOX ARE CONSTRUCTED MONOLITHICALLY.
 6. ONLY PRECAST MODIFIED INLET BOXES SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 SHALL BE PERMITTED. FOR A BULLETIN 15 LISTING, SUBMIT A 22" X 36" REPRODUCIBLE SHOP DRAWING TO THE BUREAU OF CONSTRUCTION AND MATERIALS. MATERIALS AND TESTING DIVISION FOR REVIEW AND APPROVAL.



SECTION A-A



SECTION C-C



PLAN VIEW

SS-11

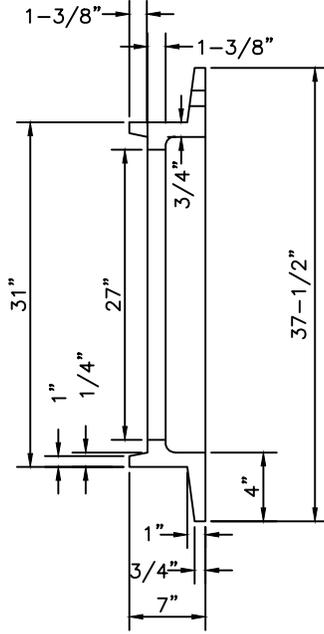
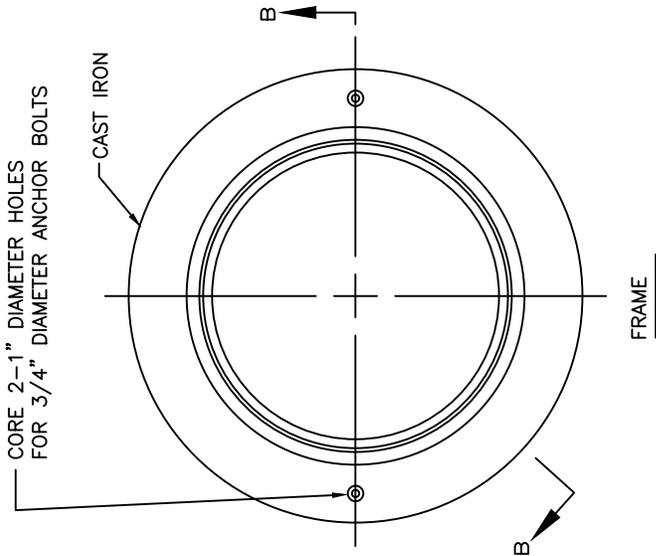
Modified Type II Inlet Box

SCALE: N.T.S.

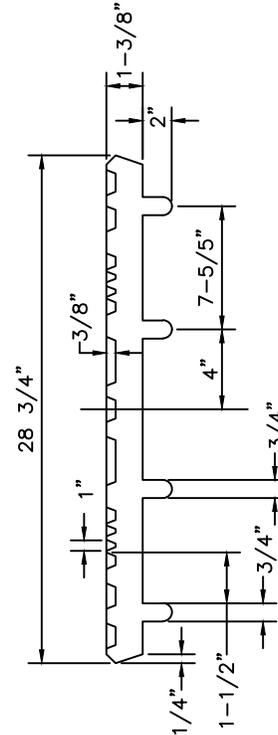
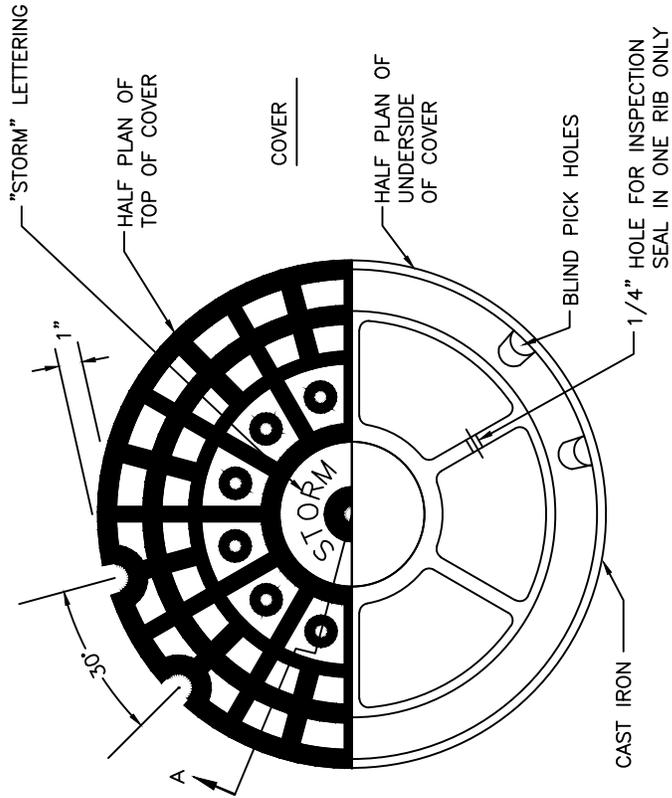
DATE: April 2016 FILE: SS-11 Modified Type II Box.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009



SECTION B-B



NOTE: LABEL MANHOLE COVER "STORM"

SECTION A-A

SS-12

Storm Sewer Manhole Frame And Cover

SCALE: N.T.S.

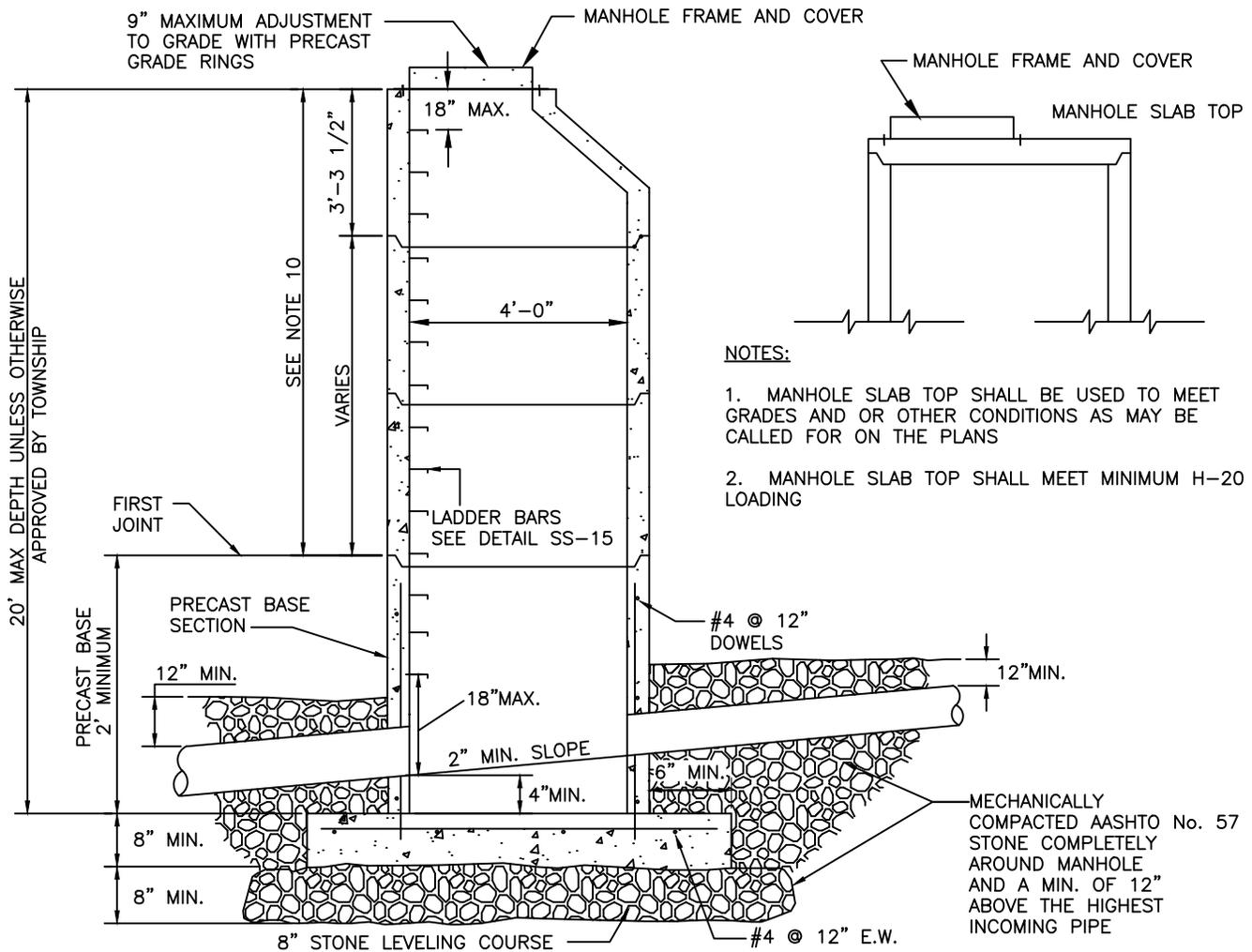
DATE: April 2016 FILE: SS-12 Manhole, Frame And Cover.dwg



Brighton Township
 Beaver County, Pennsylvania
 1300 Brighton Road
 Beaver, PA 15009

NOTES:

1. CONSTRUCT MANHOLE IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 408, SECTION 605, FOR CAST-IN-PLACE UNITS AND SECTION 714 FOR PRECAST CEMENT CONCRETE UNITS.
2. FURNISH AND INSTALL MANHOLES, CONNECTIONS, JOINTS, STEPS, AND OTHER APPURTENANCES AND DETAILS IN ACCORDANCE WITH PENNDOT PUBLICATION 72M STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION – RC-39M, STANDARD MANHOLES.
3. ONLY PRECAST MANHOLES SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.
4. DO NOT EXTEND PIPE BLOCK-OUTS INTO THE BASE WHEN BASE IS NOT MONOLITHIC WITH THE MANHOLE WALLS.
5. LOCATE PIPE OR PIPES, AS REQUIRED, WITH THE MANHOLE BOTTOM SHAPED TO CHANNEL THE FLOW TOWARD THE OUTLET PIPE.
6. BRICK OR CONCRETE BLOCK MANHOLES SHALL NOT BE PERMITTED.
7. STORM SEWER DROP CONNECTIONS FROM INVERT OF OUTFLOW PIPE TO INVERT OF INFLOW PIPES SHALL BE A MAXIMUM OF 2 FT.
8. MAXIMUM ADJUSTMENT TO FINISHED GRADE USING PRECAST GRADE RINGS SHALL NOT EXCEED NINE INCHES (9").
9. MANHOLE INVERT SHALL BE CONCRETE TO THE SPRING LINE OF PIPE WITH SIDES SLOPING 1/2" TO 1'-0" TO INSIDE FACE OF PRECAST BASE SECTION.
10. IF THIS DIMENSION IS 3'-3", USE PRECAST SLAB TOP DESIGNED TO MEET LOAD CONDITIONS



NOTES:

1. MANHOLE SLAB TOP SHALL BE USED TO MEET GRADES AND OR OTHER CONDITIONS AS MAY BE CALLED FOR ON THE PLANS
2. MANHOLE SLAB TOP SHALL MEET MINIMUM H-20 LOADING

THIS DETAIL IS FOR PIPES 30" DIA. OR LESS FOR LARGER PIPES PROVIDE A MODIFIED MANHOLE PER PENNDOT ROADWAY CONSTRUCTION STANDARDS

SS-13

Storm Sewer Manhole (Pipes Under 36 In. Dia.)

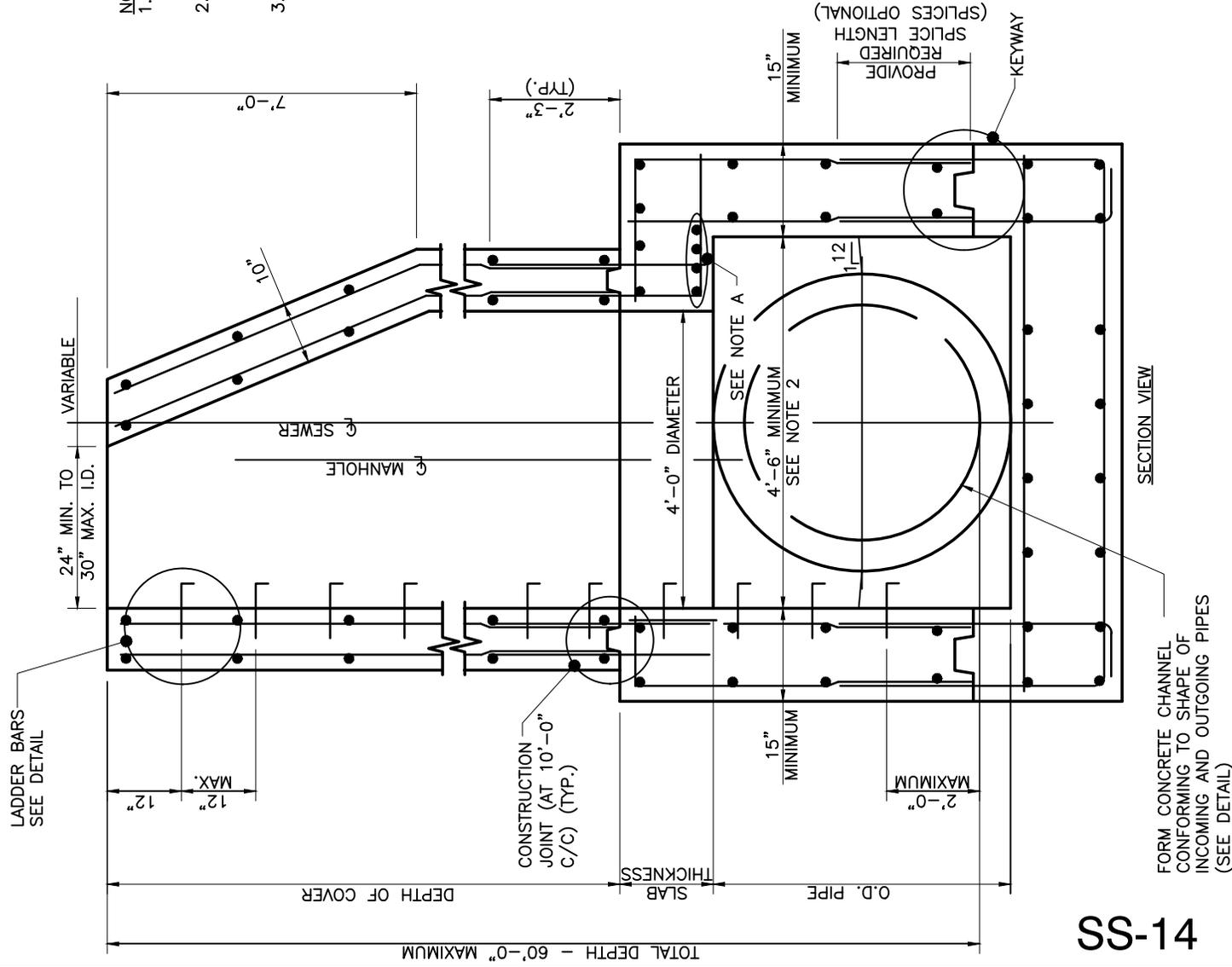
SCALE: N.T.S.

DATE: April 2016 FILE: SS-13 Typical Manhole.dwg



Brighton Township
Beaver County, Pennsylvania
1300 Brighton Road
Beaver, PA 15009

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NOTES:

1. FOR CONSTRUCTION REQUIREMENTS SEE PENNDOT RC-39 FOR DESIGN REQUIREMENTS SEE PENNDOT RC-39.
 2. INCREASE BOX SIZE WHEN REQUIRED TO KEEP WALLS OF MANHOLE BOX SECTION FLUSH WITH THE OPENING FOR PIPES LARGER THAN 42 INCHES I.D.
 3. DESIGN PROCEDURE FOR MANHOLE BOX SECTION.
 - DESIGN ALL MEMBERS FOR MOMENT, CRACK CONTROL & SHEAR AT DISTANCE d (EFFECTIVE DEPTH OF MEMBER) FROM FACE OF SUPPORT. ALL SPAN LENGTHS ARE CALCULATED FROM THE CENTER OF THE SUPPORTS.
- A. TOP SLAB**
- DESIGN A 12" WIDE SLAB STRIP FOR ONE-WAY ACTION TO CARRY DEAD LOAD, LIVE LOAD, AND WEIGHT OF EARTH. SPAN THE STRIP, SIMPLY SUPPORTED, ACROSS THE WIDTH OF THE BOX OR IN THE SHORT DIRECTION.
 - PLACE ADDITIONAL BARS IN THE SLAB AT 45 DEGREES AROUND THE MANHOLE OPENING. FFF - 1/85
- B. "EDGE BEAM"**
- "EDGE BEAMS" TO BE THE SAME DEPTH AS THE TOP SLAB. TO ACHIEVE REQUIRED CAPACITY WHERE NECESSARY, INCREASE DEPTH OF "EDGE BEAM" BY PROVIDING ADDITIONAL CLEARANCE BETWEEN THE SLAB AND TOP OF OPENING. LOCATE HORIZONTAL STEEL FOR BEAM ABOVE THE SOFFIT OF THE OPENING.
 - DESIGN THE "EDGE BEAMS", SPANNING THE LENGTH OF THE BOX, TO CARRY A UNIFORMLY DISTRIBUTED LOAD EQUAL TO THE REACTION FROM THE SLAB.
- C. WALLS**
- DESIGN THE WALLS TO CARRY THE AXIAL LOAD, DUE TO EARTH LOAD, LIVE LOAD, AND DEAD LOAD APPLIED DIRECTLY TO THE WALL, IN ADDITION TO REACTIONS FROM THE "EDGE BEAMS", AND THE VERTICAL MOMENT CAUSED BY SATURATED AT REST EARTH PRESSURE. CONSIDER THE WALL SIMPLY SUPPORTED BETWEEN TOP SLAB AND FOOTING. PROVIDE THE SAME REINFORCEMENT ON THE OUTSIDE FACE.
- D. FOOTING**
- DESIGN SPAN NORMAL TO PIPE TO CARRY POSITIVE MOMENT OF $1/10$ WL AND NEGATIVE MOMENT OF $1/12$ WL WHERE W IS THE UNIFORM BEARING PRESSURE. DO NOT TAKE INTO ACCOUNT THE CONCRETE IN THE CHANNEL WHEN CALCULATING CAPACITY OF THE FOOTING.
 - AS A MINIMUM, PROVIDE NO. 4 BARS AT 12" CENTERS, TOP AND BOTTOM OF SLAB IN THE OPPOSITE DIRECTION.

Storm Sewer Manhole (Pipes Over 36 In. Dia.)

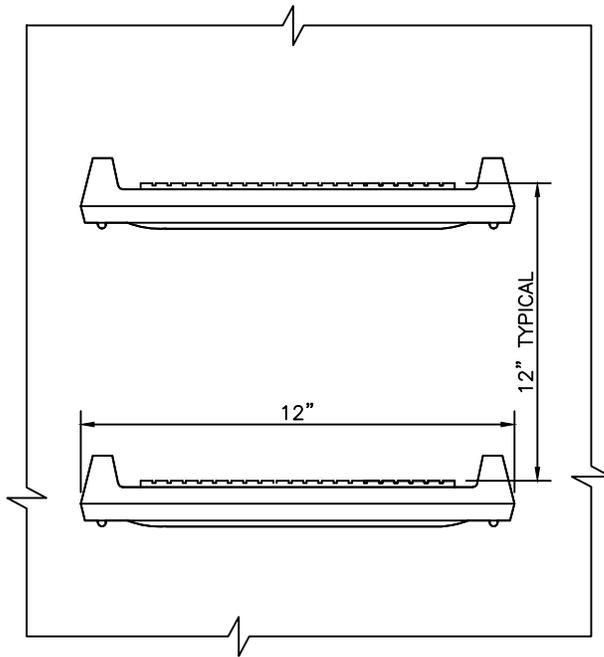
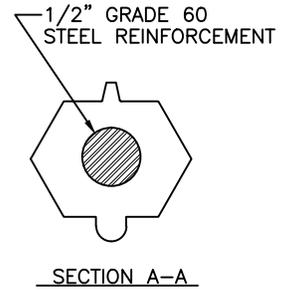
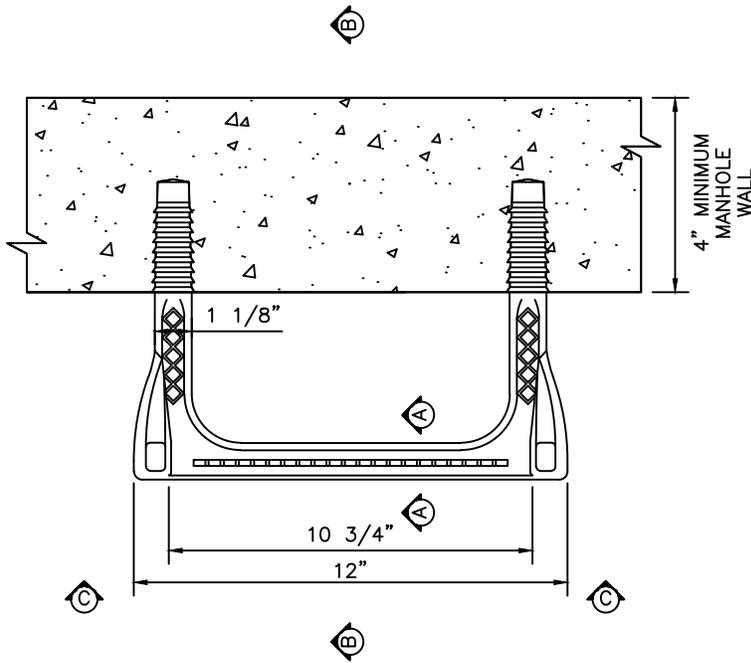
SS-14

SCALE: N.T.S.

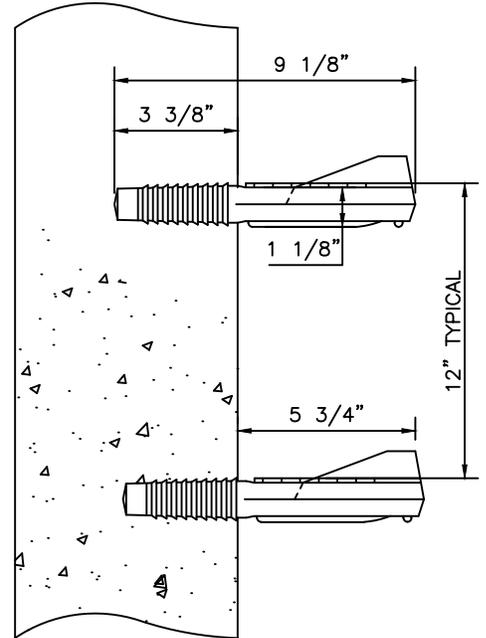
DATE: April 2016 FILE: SS-14 Manhole Over 48 In..dwg



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VIEW C-C



SECTION B-B

NOTE:

LADDER BARS SHALL MEET ALL
 MINIMUM O.S.H.A. REQUIREMENTS AND
 CONFORM TO ASTM C-478, LATEST
 REVISION FOR MANHOLES AND INLETS

SS-15

Ladder Bars For Manholes

SCALE: N.T.S.

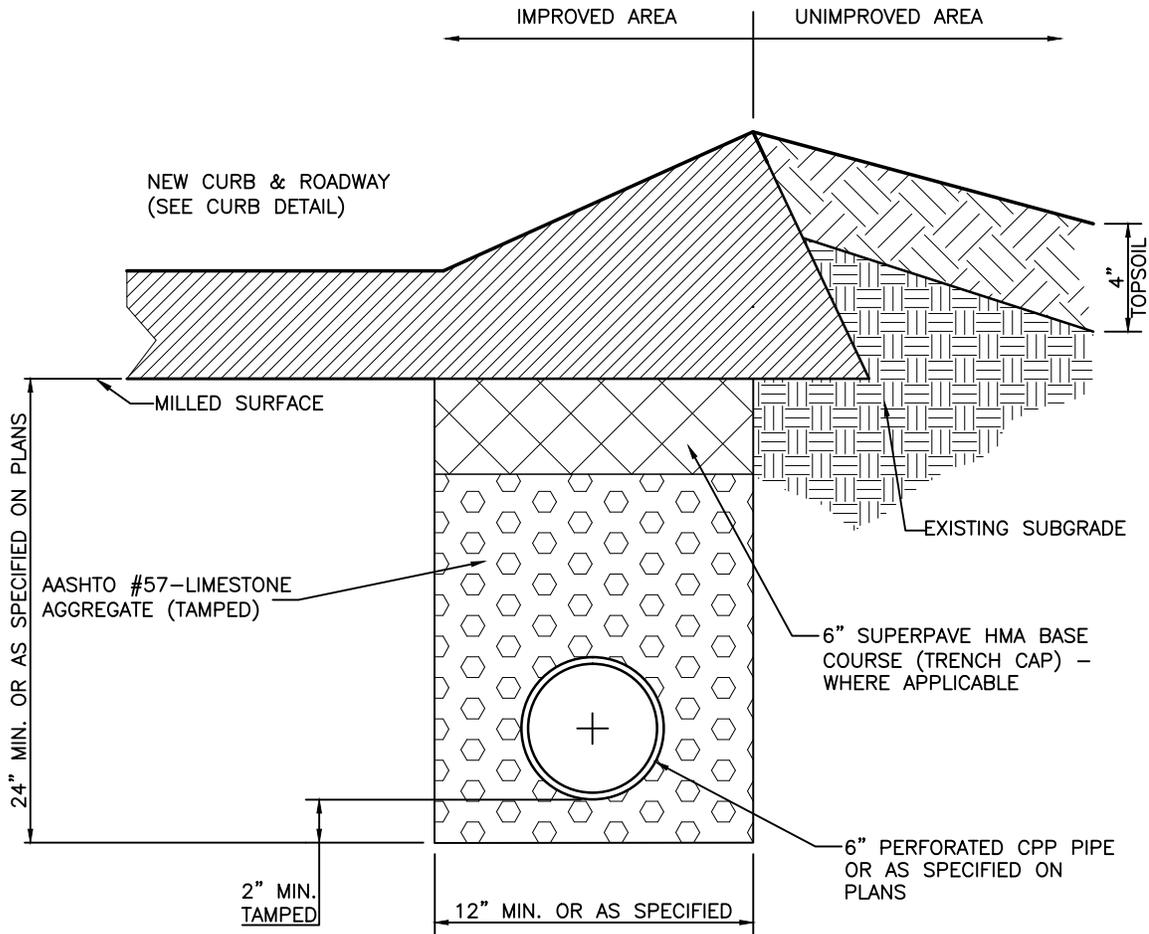
DATE: April 2016 FILE: SS-15 Ladder Bars.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Storm_Sewer\SS-15 Ladder Bars.dwg Layout=Ladder Bars for Manholes

n:\PROJ\205\details\brighton_twp\dwg\Storm_Sewer\SS-16_Pavement_Base_Drain.dwg Layout=Pavement Base Drain



NOTES:
 1. MATERIALS AND CONSTRUCTION SHALL CONFORM WITH THE REQUIREMENTS OF PENNDOT FORM 408, SECTIONS 610 AND 615.

SS-16

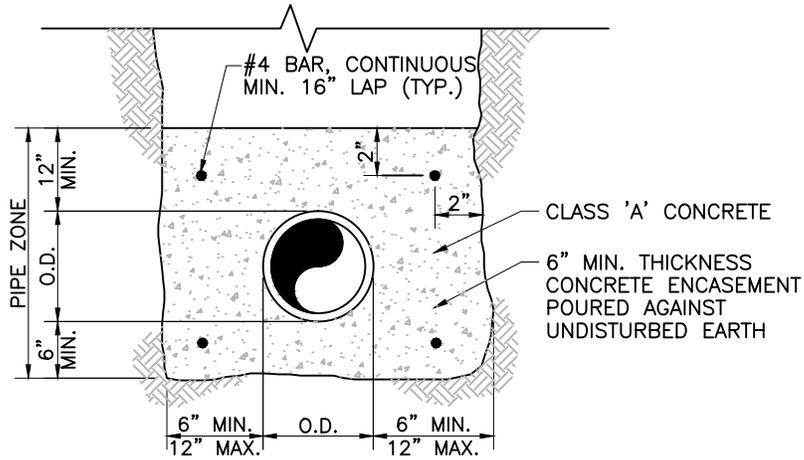
Pavement Base Drain

SCALE: N.T.S.

DATE: April 2016 FILE: SS-16 Pavement Base Drain.dwg

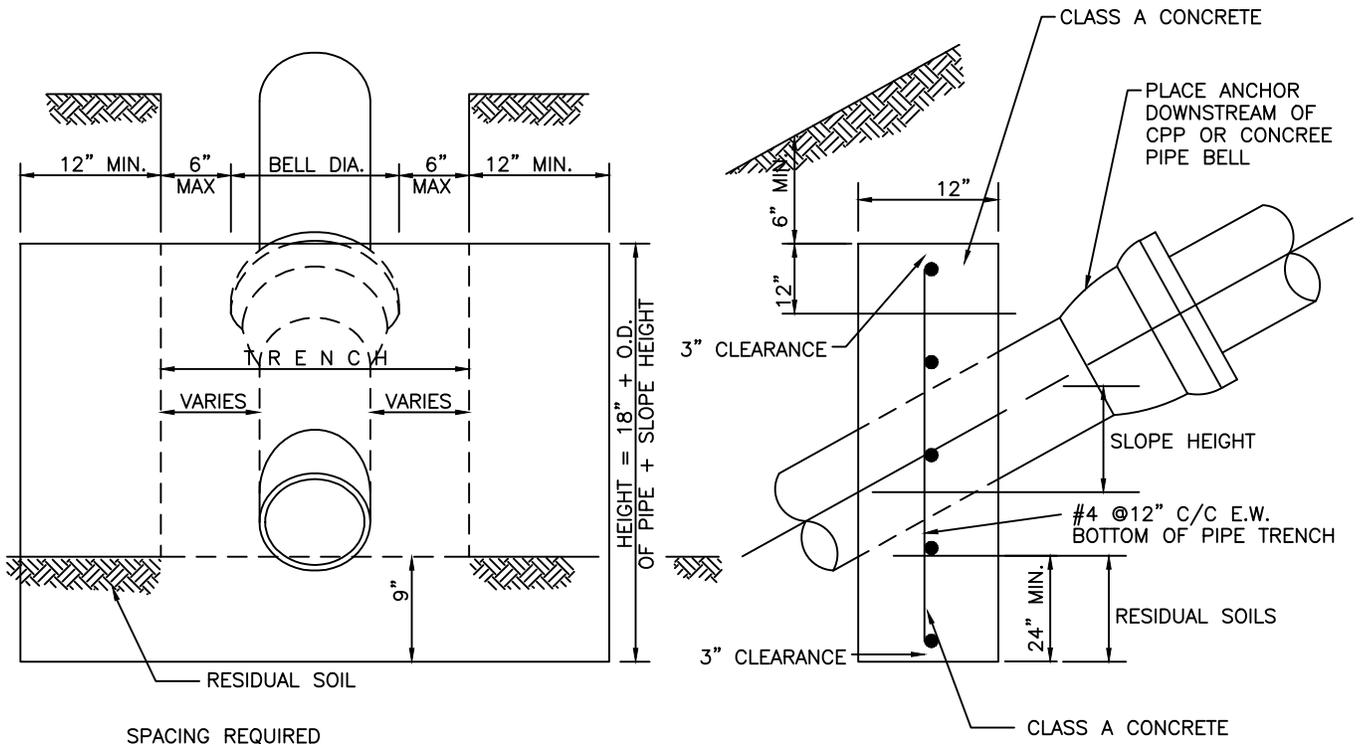


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CONCRETE ENCASEMENT

N. T. S.



SPACING REQUIRED

% GRADE	DISTANCE CENTER TO CENTER
20% TO 35%	36' C. to C.
35% TO 50%	24' C. to C.
50% +	15' C. to C.

DUCTILE IRON PIPE SHALL BE USED FOR ALL SEWERS OVER 40% GRADE.

STORM CONCRETE ANCHOR

N. T. S.

SS-17

Concrete Encasement And Storm Anchor

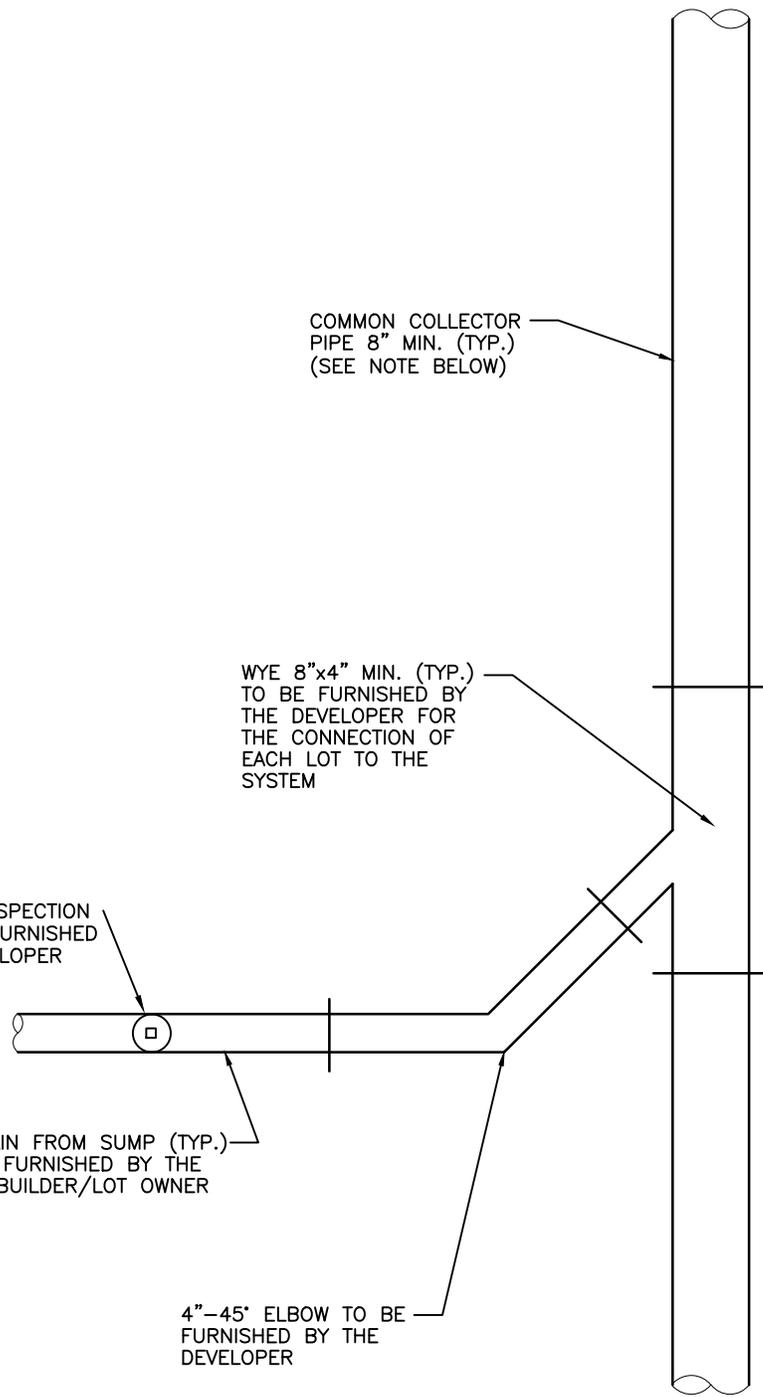
SCALE: N.T.S.

DATE: April 2016 FILE: SS-17 Concrete Encasement And Anchor.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Storm_Sewer\SS-18_Common_Collector_Pipe_Connection.dwg



NOTES:

1. THE COMMON COLLECTOR PIPE MUST BE SIZED FOR THE CONTRIBUTING DRAINAGE AREA. THE PIPE MUST BE A MINIMUM OF 8 INCHES SDR-35 "BLACK" IN DIAMETER AND SIZED BY A PROFESSIONAL ENGINEER. THE PIPE SIZE DESIGN MUST BE APPROVED BY THE TOWNSHIP. PIPE COLOR MUST BE BLACK WITH WARNING TAPE INDICATING STORM PIPE. ALL PIPES UNDER 8" MUST BE SDR-26 WITH COLOR "BLACK" FOR STORM SEWERS
2. MAINTENANCE OF THE COMMON COLLECTOR PIPE WILL BE THE SHARED RESPONSIBILITY OF THE OWNERS OF THE HOMES SERVED BY THE PIPE OR BY A HOME OWNER'S ASSOCIATION. A NOTE SHALL BE ADDED TO THE SUBDIVISION PLAN INDICATING RESPONSIBILITY.

SS-18

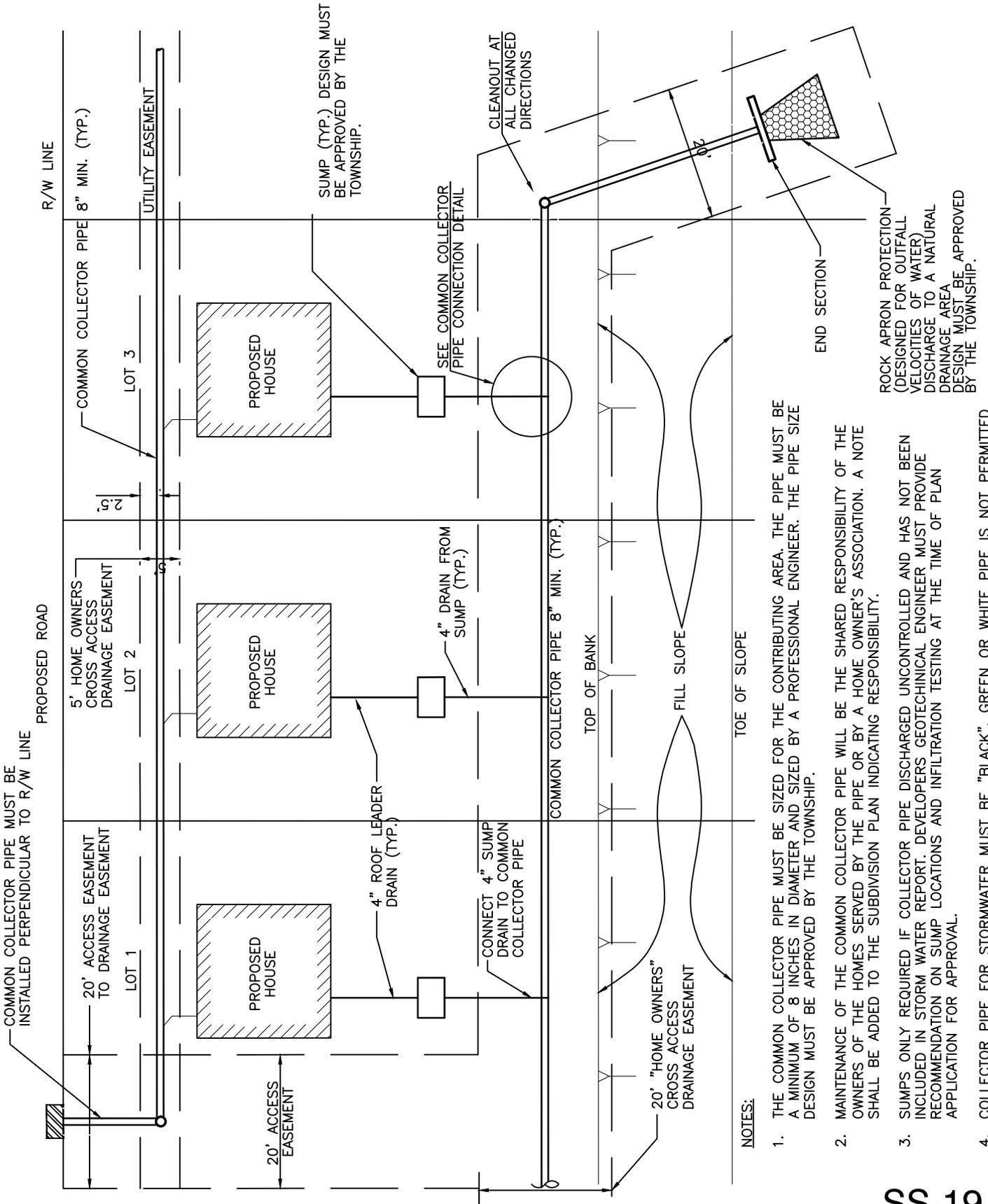
Common Collector Pipe Connection

SCALE: N.T.S.

DATE: April 2016 FILE: SS-18 Common Collector Pipe Connection.dwg



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SS-19

Roof Drain Sump Outlet Common Collector

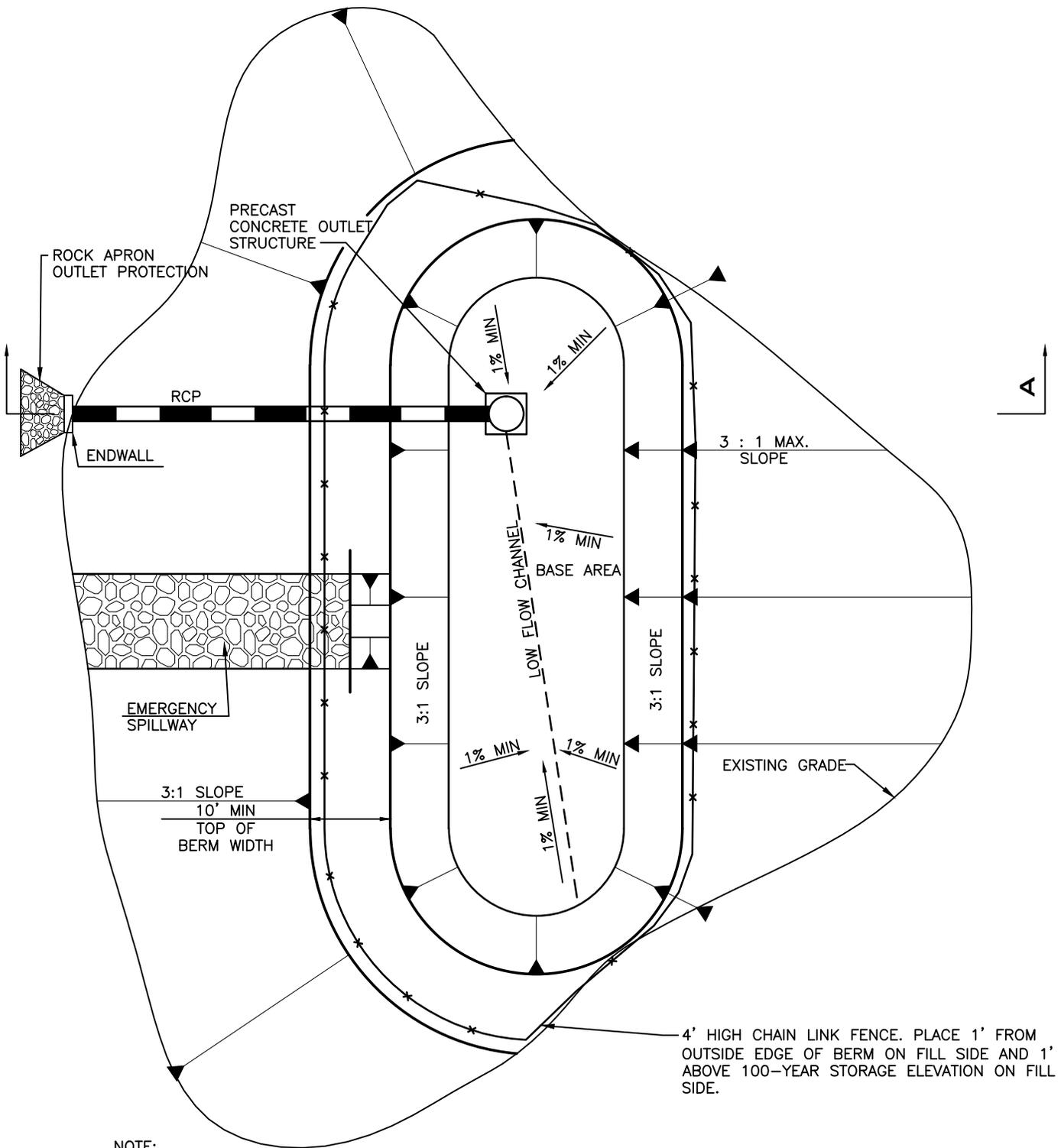
SCALE: N.T.S.

DATE: April 2016 FILE: SS-19 Roof Drain Sump Outlet Common Collector.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Stormwater\SW-02 Permanent Earth Dam.dwg Layout=Permanent Earth Dam - Plan View



NOTE:

1. PROVIDE ACCESS ROAD TO POND EMBANKMENT. ACCESS ROAD SHALL BE MIN. 10' WIDE CONSTRUCTED OF 8" AASHTO No. 1 STONE CHOKED WITH AASHTO No. 57 STONE OVER CLASS 4, TYPE A GEOTEXTILE FABRIC. ACCESS ROAD SLOPE MIN. 1%, MAX 15%.
2. PROVIDE 10' WIDE ACCESS GATE IN POND FENCE.

SW-01

Permanent Earth Dam - Plan View

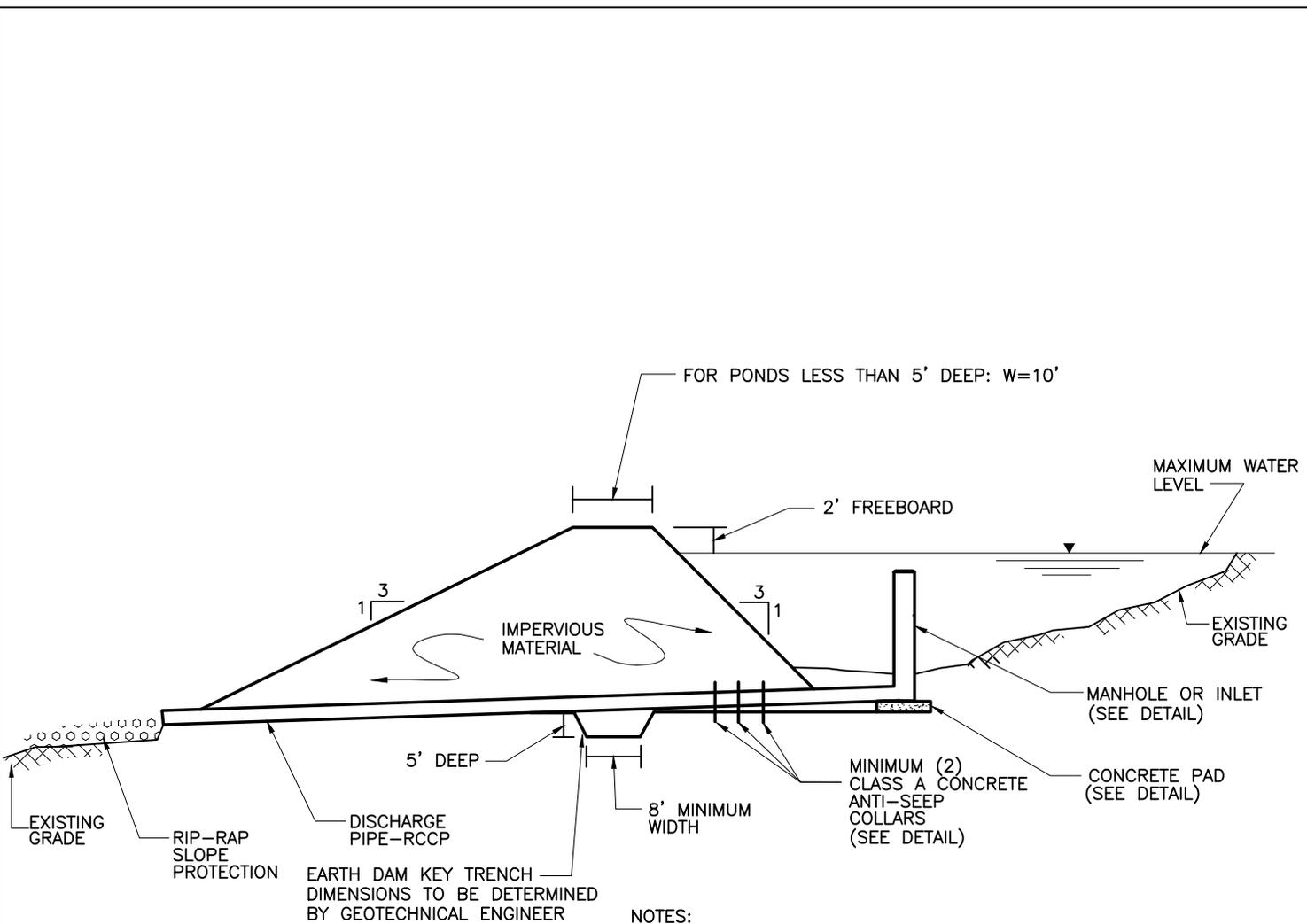
SCALE: N.T.S.

DATE: April 2016 FILE: SW-02 Permanent Earth Dam.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Stormwater\SW-02 Permanent Earth Dam.dwg Layout=Permanent Earth Dam - Section A-A



EARTH DAM KEY TRENCH DIMENSIONS TO BE DETERMINED BY GEOTECHNICAL ENGINEER

NOTES:

1. ROCK APRON OUTLET PROTECTION TO BE SIZED ACCORDING TO EXIT VELOCITY AND SHEAR CALCULATIONS TO BE SUBMITTED TO THE TOWNSHIP (SEE DETAILS).
2. ALL CALCULATIONS FOR BASIN SIZING, FREEBOARD, OUTLET STRUCTURES, DISCHARGE PIPES, ETC. MUST BE SUBMITTED TO THE TOWNSHIP.
3. TEMPORARY RISER PIPES MAY BE CMP RISERS.
4. PROVIDE COMPACTION REPORTS FOR EMBANKMENT CONSTRUCTION TO TOWNSHIP.

SW-02

Permanent Earth Dam - Section A-A

SCALE: N.T.S.

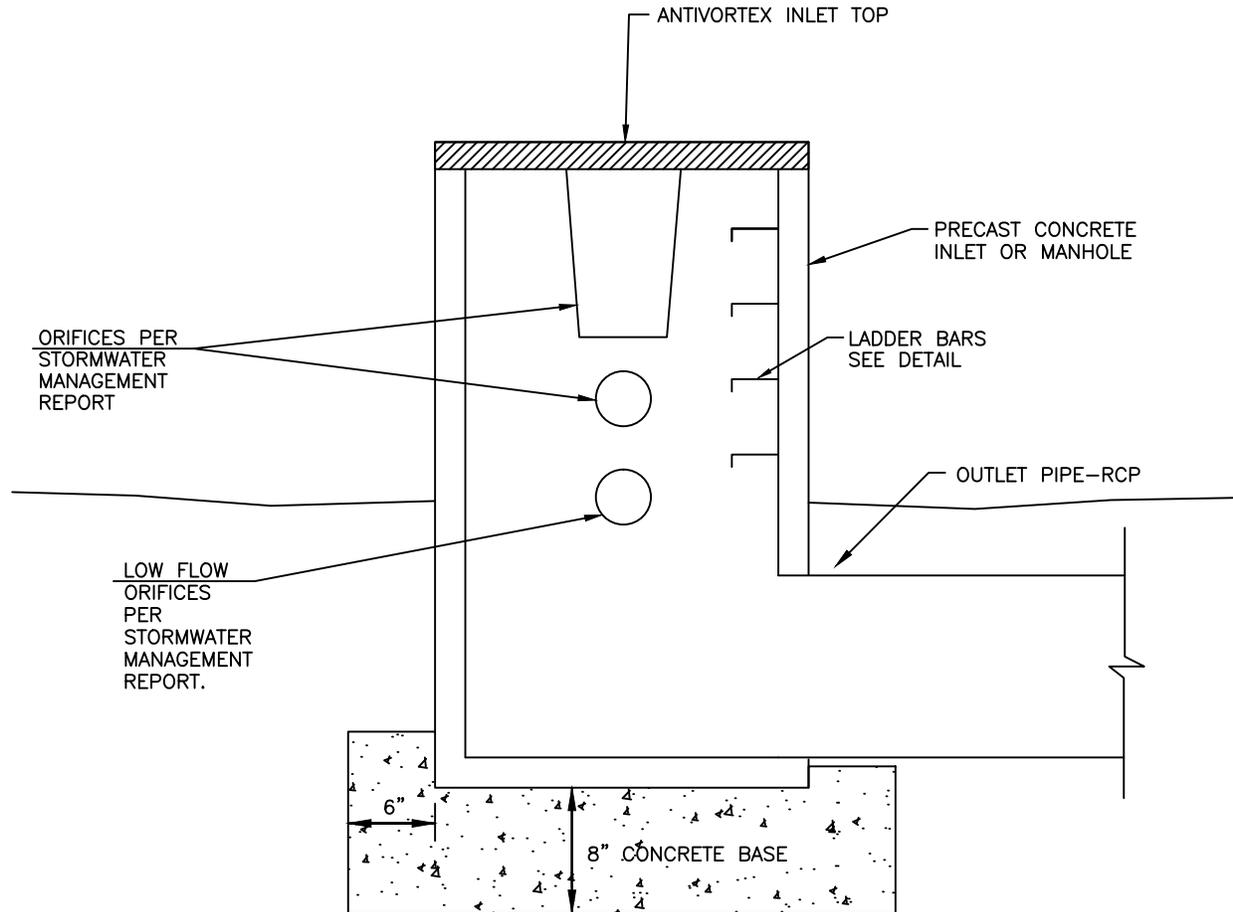
DATE: April 2016 FILE: SW-02 Permanent Earth Dam.dwg



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NOTES:

1. ALL CONCRETE SHALL BE PennDOT CLASS AA CONCRETE, 4000 PSI, 5% AIR ENTRAINED
2. PRECAST SECTIONS SHALL CONFORM TO ASTM C-478 AS REVISED
3. ALL PRECAST CONCRETE RISERS SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15 WILL BE PERMITTED.
4. TRASH RACKS OR DEBRIS SCREENS ARE REQUIRED ON FLOW FLOW ORIFICES.



SW-03

Detention Facility Outlet Structure

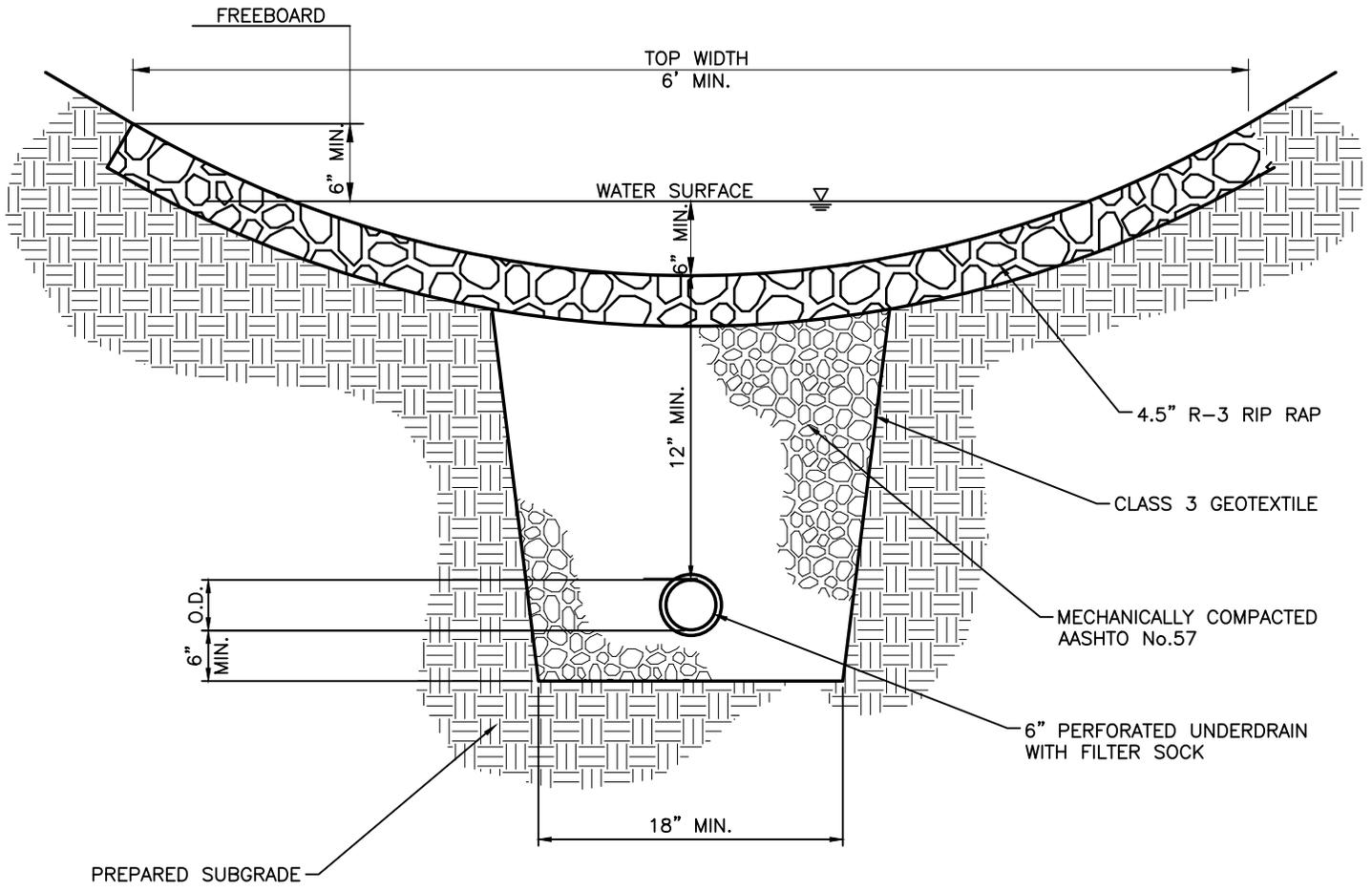
SCALE: N.T.S.

DATE: April 2016 FILE: SW-03 Detention Facility Outlet Structure.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Stormwater\SW-04 Riprap Pilot Channel.dwg Layout=Low Flow Channel with Underdrain



NOTES:

1. CHANNEL SHOULD BE DESIGNED TO HAVE A MINIMUM LONGITUDINAL SLOPE OF 1% TOWARD OUTLET STRUCTURE

SW-04

Low Flow Channel With Underdrain

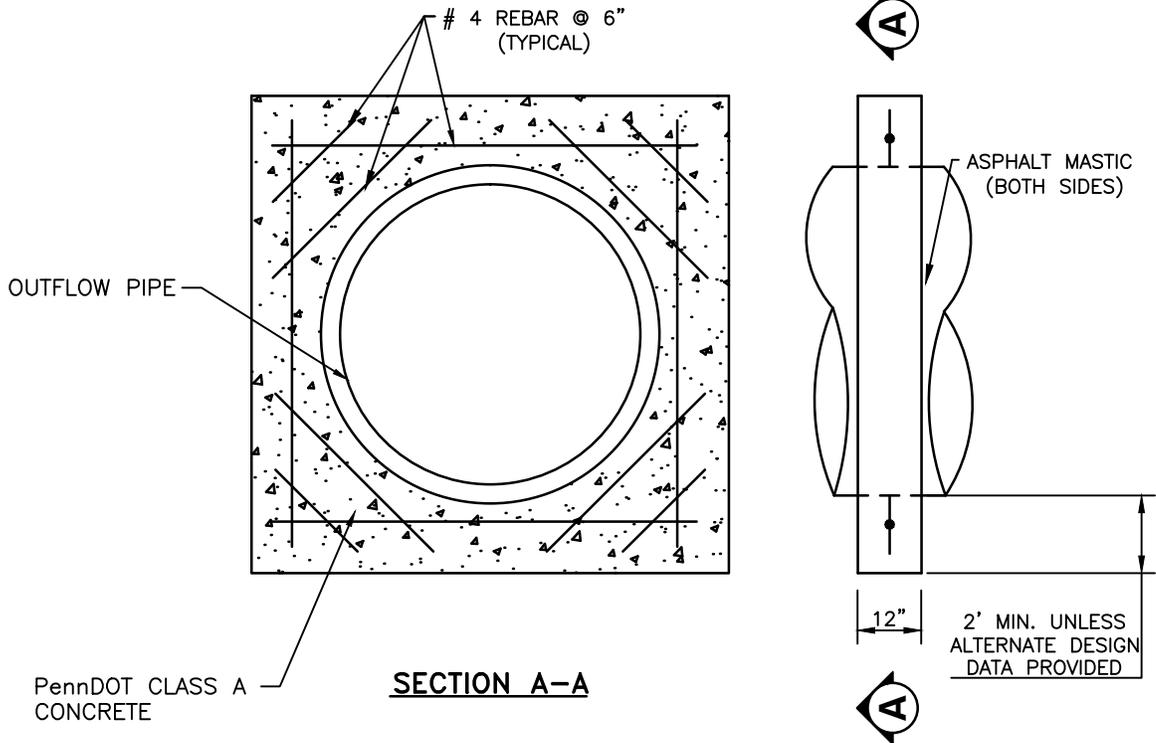
SCALE: N.T.S.

DATE: April 2016 FILE: SW-04 Riprap Pilot Channel.dwg



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NOTES:

1. NUMBER OF ANTI-SEEP COLLARS TO BE INSTALLED AND SPACING TO BE SPECIFIED ON DETENTION FACILITY PROFILE.

SW-05

Concrete Anti-Seep Collar

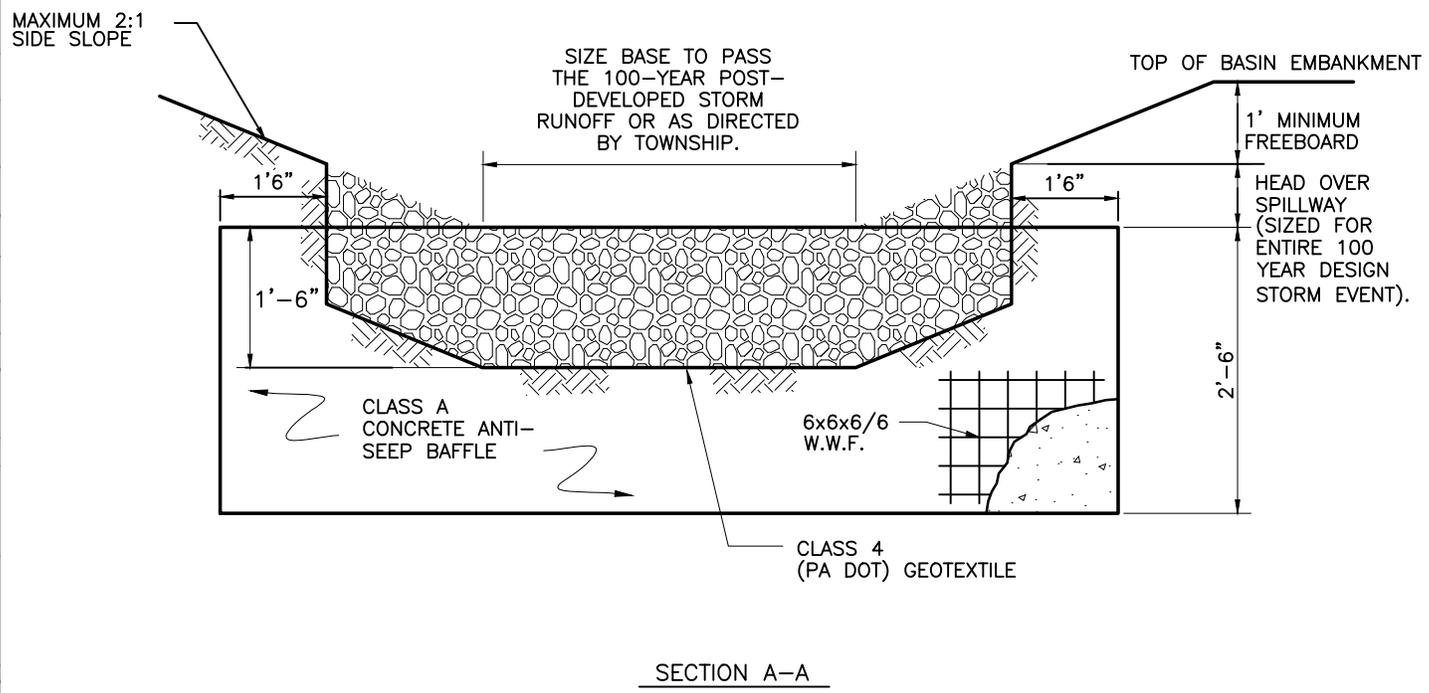
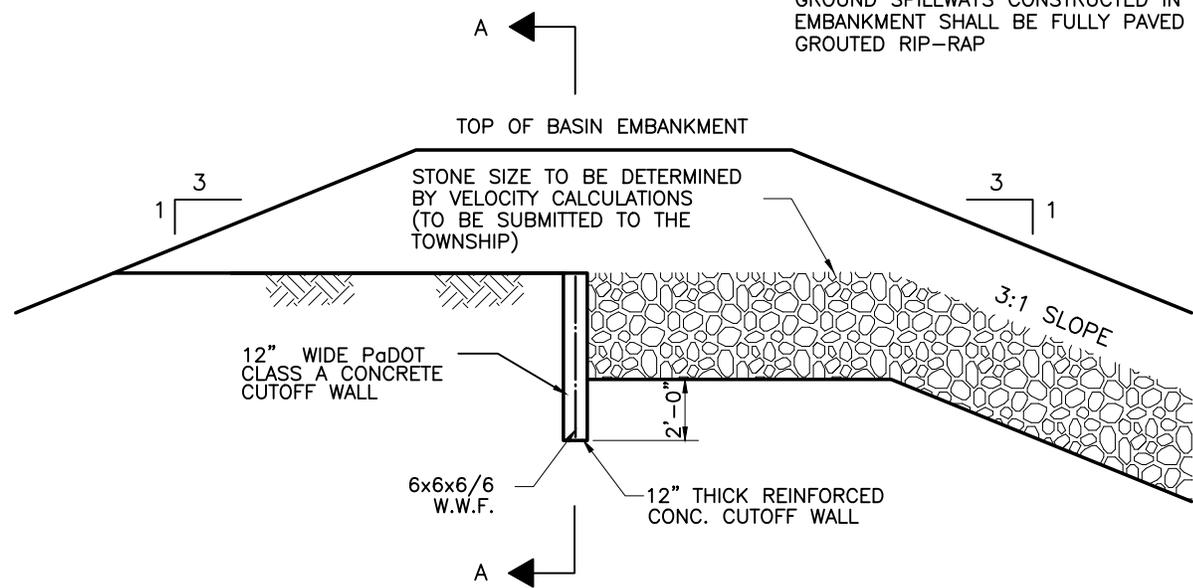
SCALE: N.T.S.

DATE: April 2016 FILE: SW-05 Concrete Anti-Seep.dwg



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NOTE:
 SPILLWAY TO BE CUT INTO EXISTING
 GROUND SPILLWAYS CONSTRUCTED IN
 EMBANKMENT SHALL BE FULLY PAVED OR
 GROUTED RIP-RAP



SECTION A-A

SW-06

Rip-Rap Emergency Spillway

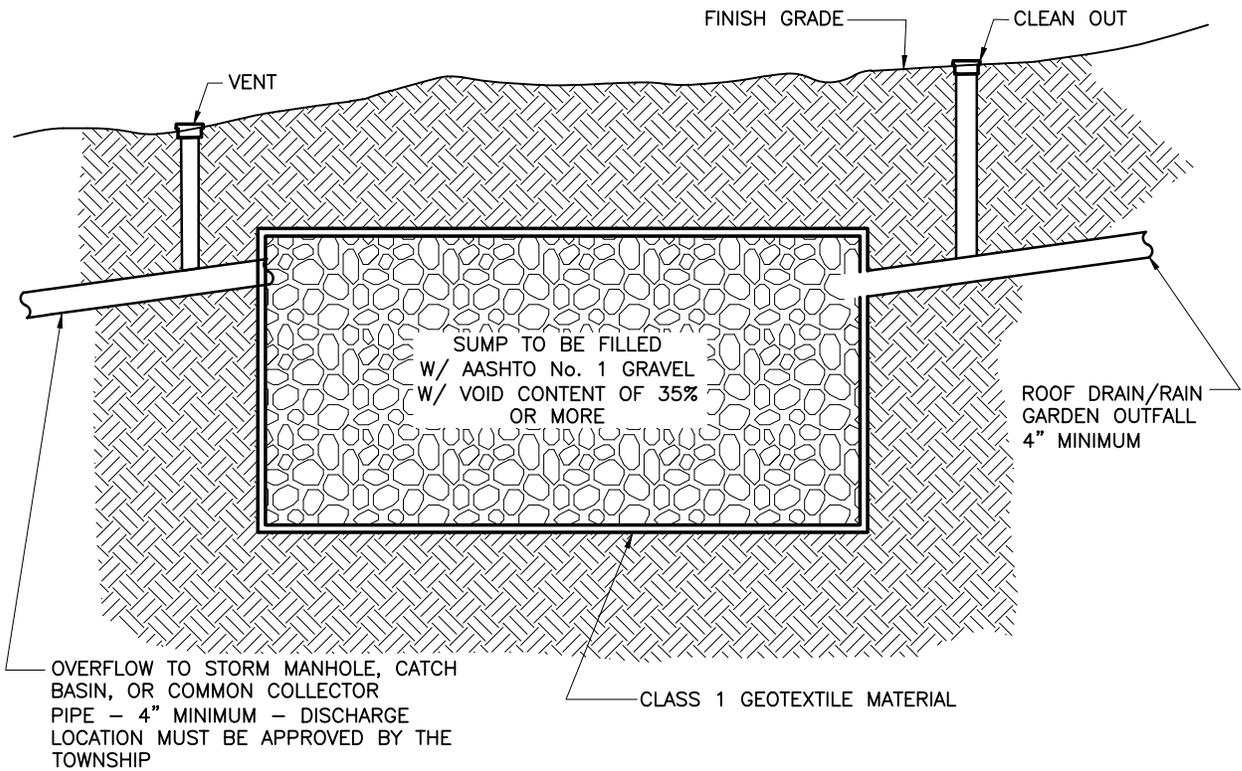
SCALE: N.T.S.

DATE: April 2016 FILE: SW-06 Riprap Emergency Spillway.dwg



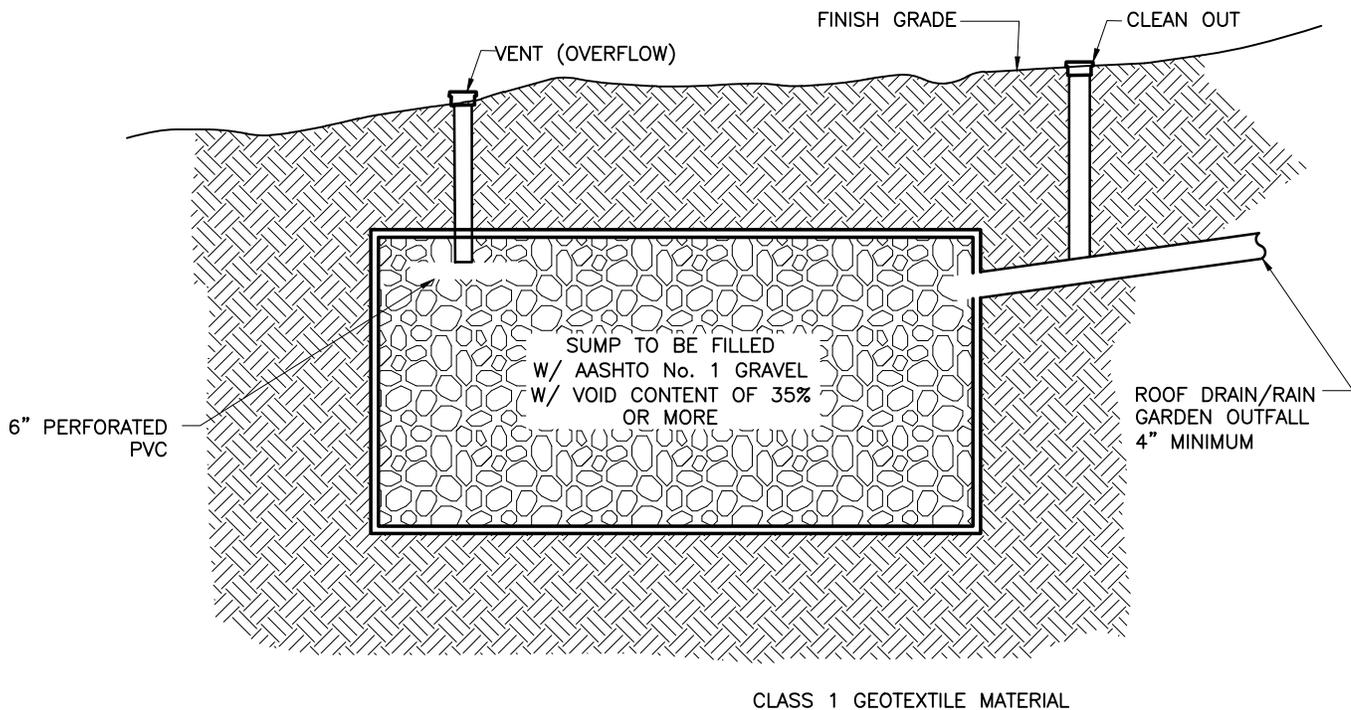
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n:\PROJ\2015\details\brighton_twp.dwg\Stormwater\SW-06 Riprap Emergency Spillway.dwg Layout=Rip-Rap Emergency Spillway



GRAVEL SUMP WITH OUTFALL

N.T.S.



GRAVEL SUMP WITHOUT OUTFALL

N.T.S.

NOTES:

1. ALL PIPE SHALL BE PVC SCHEDULE 40
2. ALL SUMPS MINIMUM 10' FROM HOUSE

SW-07

Gravel Sump

SCALE: N.T.S.

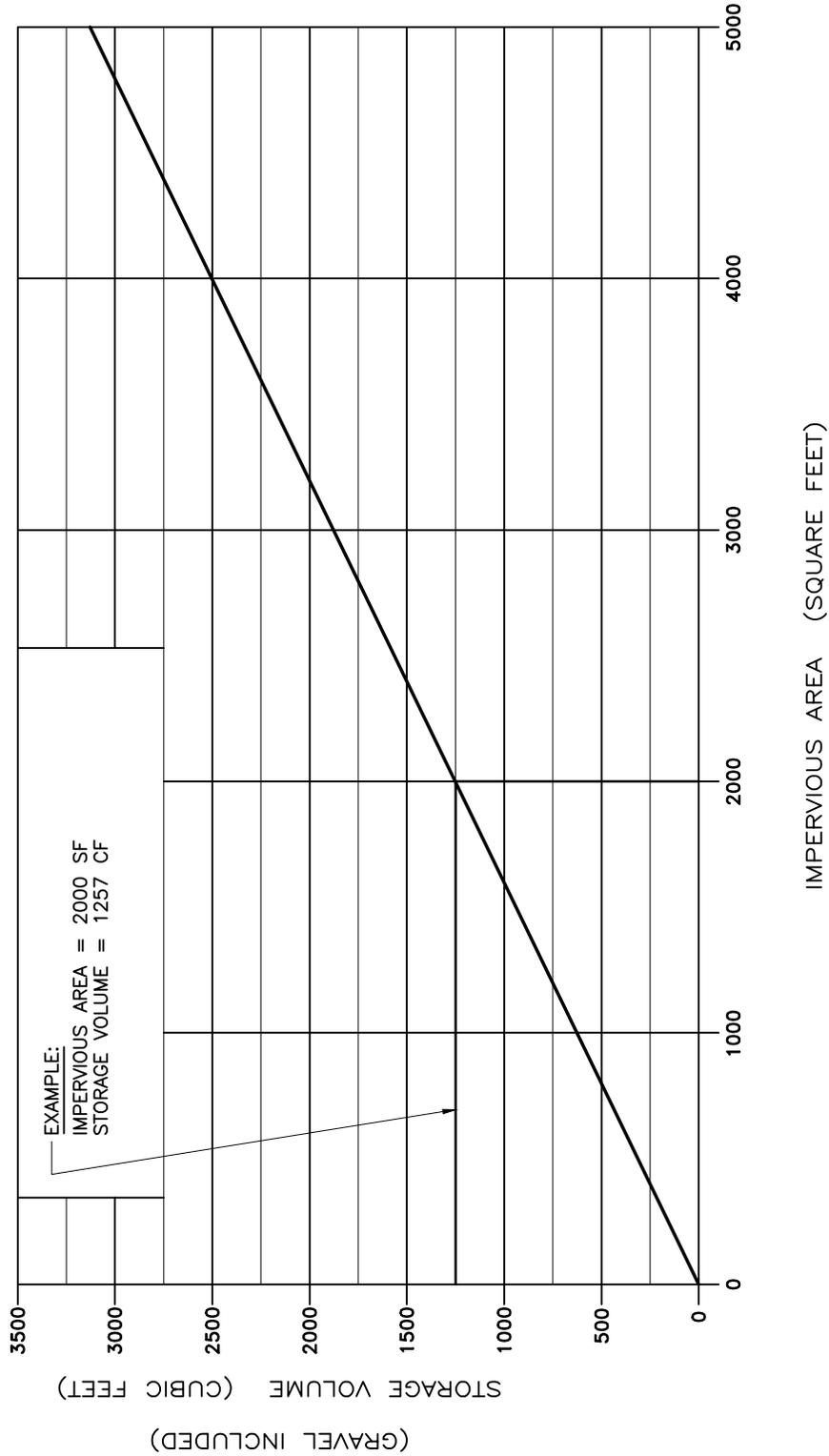
DATE: April 2016 FILE: SW-07 Gravel Sump.dwg



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n:\PROJ\205\details\brighton_twp.dwg\Stormwater\SW-07 Gravel Sump.dwg Layout=Gravel Sump

GRAVEL SUMP SIZING CHART
100 YEAR DESIGN STORM



SW-08

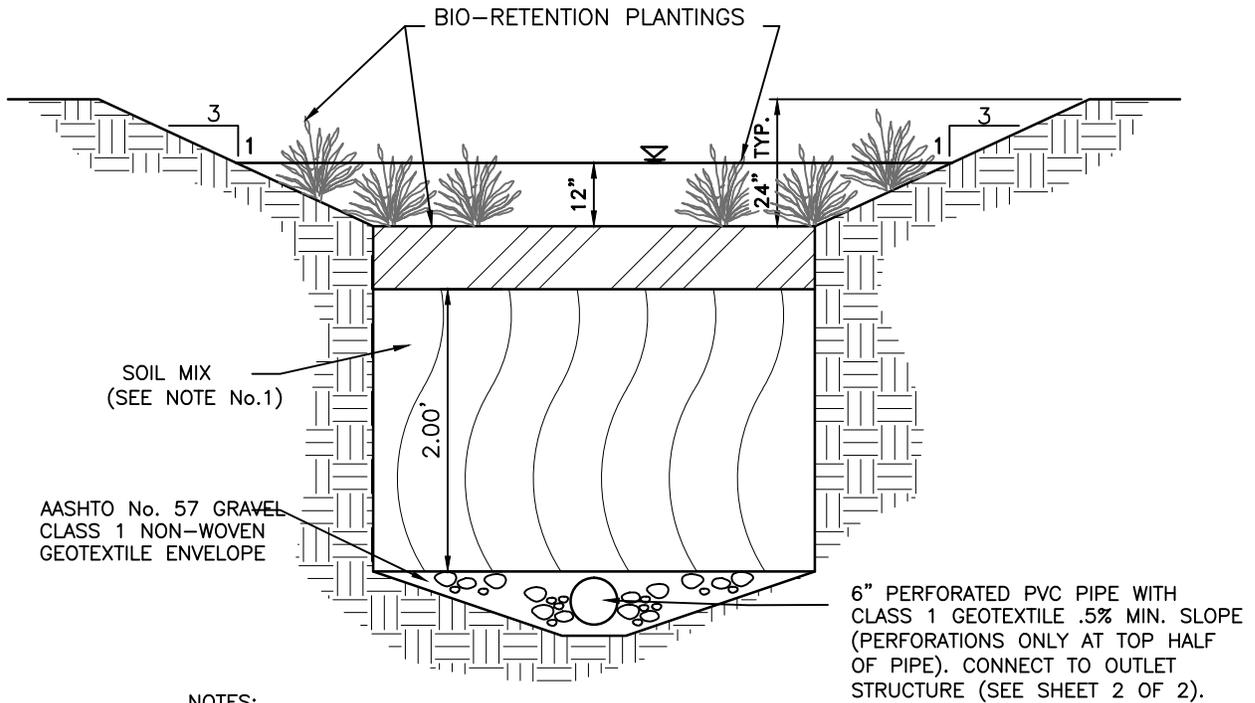
Gravel Sump Storage Chart

SCALE: N.T.S.

DATE: April 2016 FILE: SW-08 Gravel Sump Storage Chart.dwg



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NOTES:

- 1. DO NOT COMPACT SOIL MIX ONCE PLACED.
- 2. PROVIDE A MINIMUM OF 6" OF STONE ABOVE AND BELOW THE PERFORATED PIPE.

SW-09

Rain Garden (1 of 2)

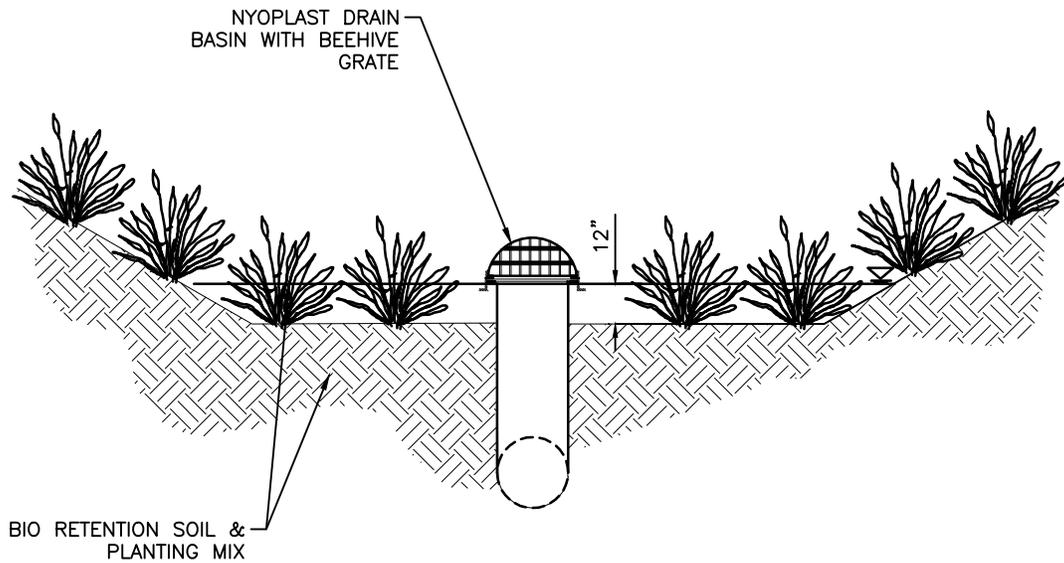
SCALE: N.T.S.

DATE: April 2016 FILE: SW-09 Rain Garden.dwg



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n:\PROJ\205\details\brighton_twp\dwg\Stormwater\SW-09 Rain Garden.dwg Layout=Rain Garden (1 of 2)



BIO-RETENTION FACILITY OUTLET STRUCTURE DETAIL

N.T.S.

PLANT LIST - BIO RETENTION AND STORMWATER MANAGEMENT FACILITIES

BOTANIC NAME	COMMON NAME	SIZE	SPACING
Retention Basin Floor Seeding Low Maintenance Grass Like Species (ERNMIX-126)	N/A	N/A	SEEDING RATE: 1/3-1/2lb per 1,000 S.F.
Rain Garden Seed Mix (ERNMIX-180)	N/A	N/A	SEEDING RATE: 1/3-1/2lb per 1,000 S.F.

*SOIL MIX MUST CONTAIN AND BE INSTALLED AS FOLLOWS:

- (1) 20% ORGANIC MATERIAL SUCH AS COMPOST OR SHREDDED HARDWOOD
30% SAND, PEA GRAVEL, OR CRUSHED SLAG
50% TOPSOIL.
- (2) SOIL MIX MUST CONTAIN NO MORE THAN 10% CLAY.
- (3) SOIL MIX MUST NOT BE COMPACTED.
- (4) SOIL MIX MUST BE PLACE AT A 2-FOOT DEPTH MINIMUM.
- (5) SOIL MIX TO BE PLACED AT THE ENTIRE BOTTOM OF THE BIO-RETENTION FACILITY.

SW-10

Rain Garden (2 of 2)

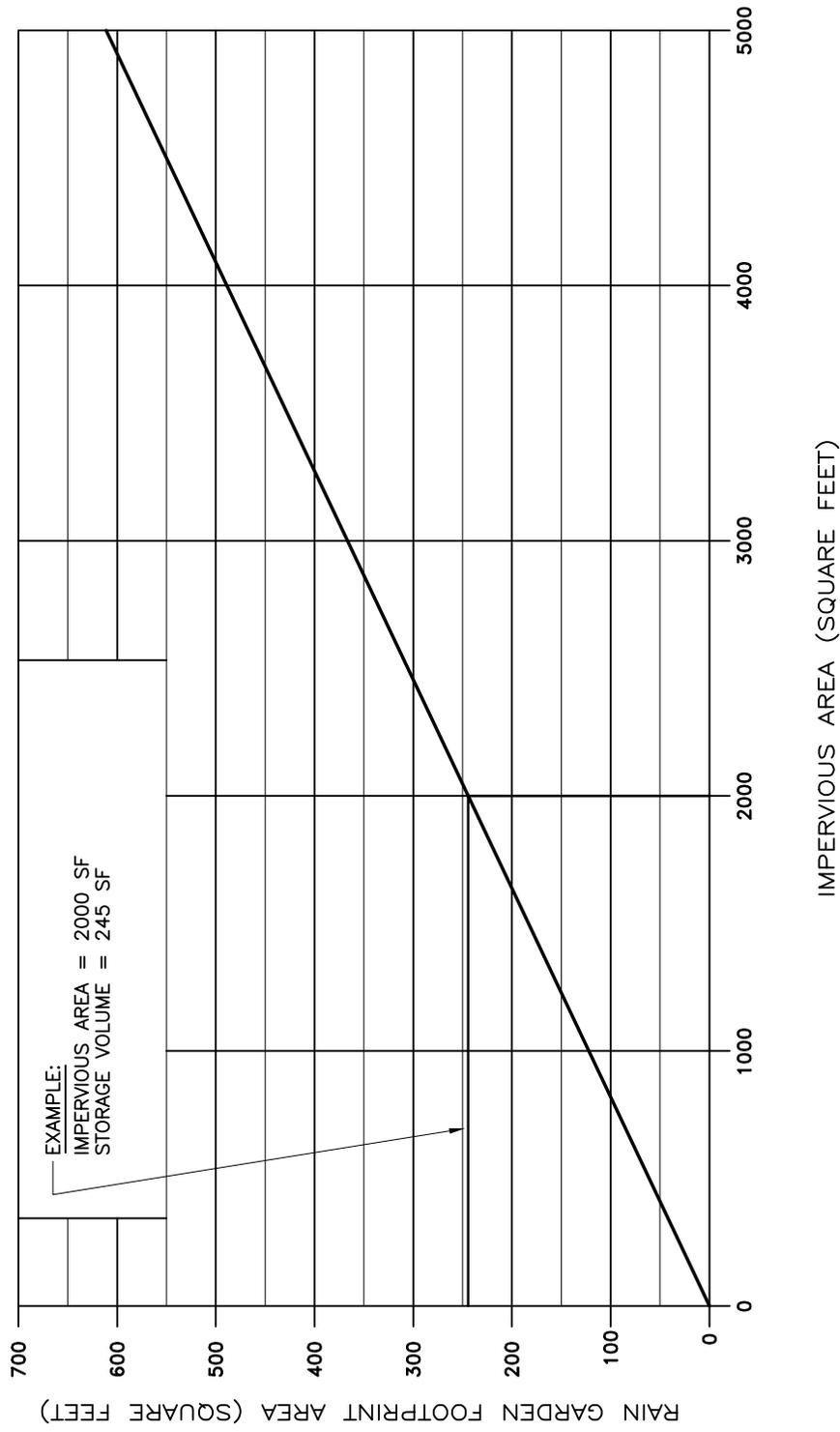
SCALE: N.T.S.

DATE: April 2016 FILE: SW-10 Rain Garden 2.dwg



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RAIN GARDEN SIZING CHART
100 YEAR DESIGN STORM



SW-11

Rain Garden Sizing Chart

SCALE: N.T.S.

DATE: April 2016 FILE: SW-11 Rain Garden Sizing Chart.dwg



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