



City of Genoa

Construction Standards Specifications and Details

Adopted by the City Council January 5, 2021

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Article 1

STREETS AND ALLEYS

1.1 Streets Required. A public street or streets shall be provided to provide access to all lots, parcels and tracts of land in the City. No private street or thoroughfare shall be permitted. Proposed streets shall extend existing adjoining streets, unless the extension would be impractical.

1.2. Standards. All streets shall comply with the following minimum specifications:

A. MAXIMUM GRADE. The maximum allowable grade for streets shall be five percent (5%) and the minimum allowable grade for all streets shall be four-tenths of one percent (0.4%).

Maximum grade for minor streets shall be ten percent (10%).

B. CURB AND GUTTER. Concrete curb and gutter shall be provided along the outside edge of all street pavements and shall comply with the following minimum specifications:

1. B6.12 type curb and gutter. A depressed or V-type, such as V-4-1/2.9 Standard #1015, or an equivalent cross-section approved by the City Engineer, on local and residential streets.

2. Barrier-type curb and gutter. When barrier type curb and gutter is required by the City Engineer, the cross-section shall be approved by the City Engineer.

C. STREET LIGHTING. Adequate street lighting facilities, in accordance with the requirements of the City, shall be provided by the developer and/or subdivider for all public streets in the subdivision or adjacent the parcel being developed.

D. TELEPHONE AND ELECTRIC DISTRIBUTION LINES. All utilities shall be placed underground in new subdivisions. Such conduits or cables shall be placed within easements or dedicated rights-of-way in a manner which will not conflict with other underground services.

E. DRAINAGE. Storm sewer inlets and catch basins shall be provided at all low points within the roadway improvements and at any additional locations specified by the City Engineer.

F. STREET NAME SIGNS. Permanent signs meeting City specifications shall be provided by the subdivider at each intersection.

G. MATERIAL STANDARDS. All construction of improvements in this Chapter shall be designed and materials used shall be in accordance with the methods and materials required in the appropriate sections of Standard Specifications for Road and Bridge Construction (latest revision) published by the Illinois Department of transportation.

H. DESIGN STANDARDS. Streets shall be designed in accordance with Street Design Standards within the Unified Development Ordinance.

I. CONSTRUCTION STANDARDS. Streets shall comply with the following construction design standards:

1.3. Alleys. Alleys may be provided only accordance with the standards in Section 6.11.5 Table of Street Standards. Alleys shall be located on public right-of-way.

1.4. Standards. Where alleys are provided, all alleys shall comply with the following minimum specifications:

A. MINIMUM PAVEMENT. The minimum thickness for alley pavement shall be ten (10) inches of aggregate base and two and one-half (2-1/2) inches of bituminous surface course (C1.1).

B. WIDTH. The paved surface of alleys shall be fourteen (14) feet wide.

1.5. Table of Street Standards.

Please refer to the Unified Development Ordinance or street Design standards.

LOCAL STREETS

<u>Surface (1.5")</u>	<u>Binder (2.5")</u>	<u>Base Coarse (12")</u>
Mixture: N 30 IL 9.5L PG: 46-28 RAP: 15% Max Air Voids: 3% Friction Aggregate: Mix C Mix Weight: 112 lbs/sq yd	Mixture: N 30 IL 19.0L Grade 9 PG: 58-28 RAP: 15% Max Air Voids: 3% Mix Weight: 112 lbs/sq yd	

STANDARD COLLECTOR

<u>Surface (1.5")</u>	<u>Binder (2.5")</u>	<u>Base Coarse (14")</u>
Mixture: N 50 IL 9.5 PG: 58-28 Rap: 15% Max Air Voids: 4% Friction Aggregate: Mix D Mix Weight: 112 lbs/sq yd	Mixture: N 50 IL 19.0 Grade 9 PG: 58-28 Rap: 15% Max Air Voids: 4% Mix Weight: 112 lbs/sq yd	

HIGH LEVEL COLLECTOR

<u>Surface (1.5")</u>	<u>Binder (2.5")</u>	<u>Base Coarse (14")</u>
Mixture N 50 IL 12.5 PG: 58-28 RAP: 0% Air Voids: 4% Friction Aggregate: Mix D Mix Weight: 112 lbs/sq yd	Mixture: N 50 IL 19.0 Grade 9 PG: 58-28 RAP: 15% Max Air Voids: 4% Mix Weight: 112 lbs/sq yd	

See Article 406.16 in IDOT manual for appropriate breakdown and finish rolling equipment.

Article 2

PUBLIC SIDEWALKS

2.1 Sidewalks Required.

A public sidewalk shall be provided to provide access to all lots, parcels and tracts in the City.

2.2 Standards.

Sidewalks shall comply with the following standards:

A. LOCATION. Sidewalks shall be provided on both sides of a street.

B. WIDTH.

1. On streets having business frontages, sidewalks shall be a minimum of five (5) feet wide except, where possible in the CBC District, they shall be eight (8) feet wide, and generally be located within the street right-of-way one (1) foot from the property line.
2. On streets having residential frontages, sidewalks shall be a minimum of four (4) feet wide and generally be located within the street right-of-way, one (1) foot from the property line.

C. DEPTH.

1. Sidewalks shall be four (4) inches concrete in depth, except they shall be a minimum of six (6) inches of concrete in depth across alleys and driveways.

Article 3
WATER DISTRIBUTION SYSTEM

3.1 Water Mains Required. Water mains and fire hydrants shall be provided to serve all lots, parcels and tracts in the City.

3.2. Water System Standards. All water mains and other water system apparatuses shall comply with the following minimum specifications and construction details.

A. Water main systems shall be designed to meet Illinois Environmental Protection Agency, Standard Specifications for Sewer and Water Main Construction in Illinois, latest edition and other applicable agency requirements. The design shall incorporate the more stringent requirements of the following items or agency requirements. **ONLY EMPLOYEES FROM THE CITY OF GENOA ARE AUTHORIZED TO OPERATE VALVES CONNECTED TO THE CITY'S WATER SYSTEM.**

IEPA PERMIT IS REQUIRED PRIOR TO CONSTRUCTION OR EXTENSION OF THE WATER SYSTEM.

1. The minimum size water main to be installed is six inches (6") in diameter.
2. All water mains shall be Ductile Iron Pipe (DIP), cement lined, class 52 AWWA C-151.
3. Valves up to 12" shall be open left resilient wedge gate valves "Mueller A-2360" or approved equivalent. Installation intervals shall not exceed 1000 feet or as directed by the City Engineer. It shall not require more than three valves to isolate a single location within the distribution system. Valves 16" and larger shall be butterfly type as manufactured by Pratt or City of Genoa approved equal.
4. Watertight valve vaults shall be provided for each valve, 6" (inches) or greater. Valve vaults are to be precast with monolithic bottom section, reinforced concrete barrel sections, concentric type top section, barrel sections shall be sealed using a butyl rubber or bituminous mastic material. Pipe penetrations are to be sealed via the use of a cast-in-place flexible synthetic rubber pipe sleeve, which is to be fastened to the pipe with stainless steel bands. Inside diameter of valve vaults shall be 48" for valves 8" or less. Valves 10" or greater shall be installed in valve vaults 60" in diameter or as required by the City Engineer or Utilities Superintendent. All tapping valves shall be installed in valve vaults 60" in diameter or as directed by the City Engineer or Utilities Superintendent. A maximum of eight inches (8") of adjusting rings may be used.
5. Hydrants are to be Waterous Pacer WB67-250 traffic breakaway type, with a fresh coat of red paint. All hydrants require a 6" auxiliary valve (Resilient Wedge Gate Valve), and valve box (Tyler 6860 series) with a valve box stabilizer (American Flow Control Trench Adapter).
6. Valve boxes shall be provided for all buried valves that are 4" (inches) and smaller. Valve boxes shall be one complete assembled unit composed of the valve box.

7. Spacing between hydrants shall be at each intersection and shall not exceed three hundred feet (300'). Front of hydrants shall be placed a minimum of three feet from the back of curb.
8. The water system must be extended, as a minimum, to the limit of the subdivision and looped wherever possible. If main is not looped, auto flusher to be installed, or at minimum, a means for an option. Note to be on plans which mains are to be public and private.
9. Connections to an existing water main shall be performed by pressure connection only. Pressure connection and valve shall be located within a valve vault, minimum diameter shall be sixty inches (60"). Tapping sleeve shall be Mueller H-615. Tapping valve shall be RESILIENT WEDGE GATE VALVE NRS mechanical joint valve. All fittings will be swabbed with chlorine solution of at least 50 mg/L. This solution must be tested by a City representative prior to use. If the Director of Public Works deems a pressure connection cannot be accomplished, use of a cut –in-sleeve and tee connection may be permitted. Shop drawings of proposed material shall be submitted to the Superintendent for approval.
10. Minimum diameter of water services is one inch (1"), type "K" copper. All corporation taps of 2" or smaller must use the direct tapping method. Copper must be one piece from corporation tap (Mueller H-15000) to round way (Mueller H15154), and also one piece from the round-way to the meter unless approved by the City utility superintendent. Curb box is to be Mueller H-10300 Series Minneapolis pattern base.
11. All frames and covers are to be in accordance to the City of Genoa Iron Requirements. Any variations in casting dimensions or otherwise must be approved by Utilities Superintendent. Valve vault covers must have "WATER" cast into the top of the cover. All casting shall be coated immediately after cleaning and machining. Coating shall be non-toxic water base asphalt paint, complying to the AWWA C104 specification.
12. All utility and service trenches under or within two feet of paved surfaces or driving areas shall be backfilled with CA-6 material and properly compacted. Mechanically compacted backfill shall be placed in six-inch horizontal layers of thickness. Each layer shall be evenly spread, moistened (or dried, if necessary), and then tamped or rolled until 90 percent relative compaction is achieved.
13. Chlorinating of the water main and collection of safe water samples shall be in accordance with IEPA requirements and completed prior to the installation of service taps.

B. Iron Frames, Lids, and Accessories.

1. Frame: Neenah R-1713 or Equivalent
Lid: Neenah R-1713 Flat Heavy Duty or Equivalent

3.3 Abandonment of Water Service Lines Shall Include:

- A. When water main is located in parkway, Corp stop will be shutoff, service line dis-connected and cap installed on Corp stop.
- B. Water line will be disconnected from B-box and riser removed

- C. If Water main is under the road, then Water line will be disconnected from B-box and riser removed
- D. If water main is in parkway and restoration is determined to be excessive (to be determined by the City of Genoa) then water line will be disconnected from B-box and riser removed.'
- E. The City, Paul Naugle (815) 970-5329), or designated employee, shall be contacted 48 hours prior to initiation of abandonment work to ensure proper compaction, and contractor to provide accurate as-built information to be signed off by the City as part of the permit.

Article 4
SANITARY SEWER COLLECTION SYSTEM

4.1 Sanitary Sewer Collection System Required. A public sanitary sewer collection system shall be provided to serve all lots, parcels and tracts in the City.

4.2 Sanitary Sewer System Standards. All sanitary sewers and other sewer system apparatuses shall comply with the following minimum specifications and construction details.

A. Sanitary sewer system shall be designed to meet Illinois Environmental Protection Agency (IEPA), Standard Specifications for Sewer Main Construction in Illinois, latest edition and other applicable requirements. The design shall incorporate the more stringent requirements of the following items or agency requirements:

1. Each single-family lot or each building in other than single-family development shall be served with a separate sanitary sewer service. All structures shall include provisions for an overhead sewer system.
2. All new buildings shall include provisions for an overhead sewer system, unless otherwise approved by the Sewer supervisor, or Director of Public Works.
3. Manholes are to be provided at each change in direction of flow, change in pipe size, change in slope, change in material and each pipe intersection, excluding services. Maximum manhole spacing is three hundred (300) feet. Where feasible, the sanitary sewer system shall be designed so as to provide for manholes to be installed within the R.O.W. Sanitary sewers installed within the rights-of-way shall not be placed more than eight feet from edge of pavement. Commercial & Industrial structures require an inspection manhole on the service line between the wye into the main and the building preferably within 5 feet of the building and in an accessible area. If an external grease trap is used the manhole must be downstream of the grease trap & domestic sewer service line.
4. Provide calculations to substantiate the available capacity of the receiving sewer.
5. Note on the plans which sewer lines are to be public and private. All public portions of the sewer must be in a dedicated easement in order to provide maintenance.
6. Sanitary sewer shall be constructed either of S.D.R. 26, ASTM 0-3034, or a sewer safe lined ductile iron pipe of class 52. Pipe shall be laid in approved bedding. Minimum size sewer main shall be eight inches (8"). Sanitary Sewers with an invert elevation ten feet or greater in depth shall be installed in as an approved sewer safe lined ductile iron pipe #52.
 - a. When connecting to an existing sewer main by means other than existing "Y", or "T", or an existing manhole, one or the following methods shall be used:

- i. Remove a section of pipe and replace with a “Y” or “T” branch section. Pipe section shall be removed by breaking only the top of one bell. After the “Y” or “T” branch is inserted, concrete shall be placed over the broken area to a minimum thickness of four inches (4”) and to a dimension of eight inches (8”) in all directions. All pipe sleeves shall be a Non-Shear Mission Coupling type.
 - ii. Using pipe cutter equal to Sewer Tap Machine by Transmate, neatly and accurately cut a hole of proper dimensions and insert “band-seal” coupling saddle DFW 6T/C to fasten the inserted fitting and hold it firmly in place. Follow manufacturer’s recommendations for installation.
 - b. Pipe penetrations into existing sanitary manholes shall be properly sized and cored and sealed (Kor-N-Seal by NPC, Inc.) with flexible watertight connections. No cut-in connection shall be made by breaking or cutting a hole in the main and inserting the spigot end of an ordinary sewer pipe. No service connections shall be made directly into manholes are permitted unless approved by the Superintendent.
7. Force-mains shall be constructed of sewer safe ductile iron pipe of class 52. All field cuts shall be restored per manufactures recommendations. Air relief valves are required at all high points along the main, and clean outs shall be installed per detail at a minimum of every 2000 feet.
 8. New sanitary manholes are to be pre-cast reinforced concrete eccentric type with a minimum 48” I.D. barrel section, and monolithic bottom section; Pipe penetrations are to be sealed via the use of a cast-in-place flexible synthetic rubber pipe sleeve, which is to be fastened to the pipe with stainless steel bands. Barrel sections shall be sealed using a butyl rubber material strip and/or rubber gasket and a eight inch (8”) “MacWrap” by Mar Mac Inc., external seal band or approved equal. Frames shall be sealed to the manhole by using a heat shrinkable wrap around sleeve equal to the Wrapid Seal manhole encapsulation system by Canusa. Existing frames requiring adjustment are also required to be sealed. A maximum of eight inches (8”) of adjusting rings may be used, with the top ring being a GNR recycled rubber ring, supplied by East Jordon or equivalent. All joints between pre-cast elements, adjusting rings and manhole frames shall be set in place using butyl rubber joint sealant. Steps shall be made of steel reinforced plastic, using an approved plastic meeting ASTM D4101, Type II, Grade 49108, over a #3 grade 60 ASTM A615, reinforcing bar. Steps shall be at 16” (inch) centers.
 9. Sanitary sewer manholes constructed in a flood plain must have a rim twenty four inches (24”)0 above base flood elevation and have a water-tight-lock type frame and cover, Neenah R-1916 C or approved equal. Cover must have “SANITARY” cast into the top of the cover.
 10. Except as provided in #9 above, all frames and covers are to be Neenah R-1713, with concealed pick holes and sealed cover, or equivalent. Manhole covers must have “SANITARY” cast into the top of the cover. All casting shall be coated immediately after cleaning and machining. Coating shall be a non-toxic water base asphalt paint, complying to the AWWA C104 specification.
 11. All utility and service trenches under or within two feet of paved surfaces or driving areas shall be backfilled with CA-6 material properly compacted. Mechanically compacted backfill shall be

placed in four-inch horizontal layers of thickness. Each layer shall be evenly spread, moistened (or dried, if necessary), and then tamped or rolled until 90 percent relative density compaction is achieved.

12. IEPA PERMIT IS REQUIRED PRIOR TO CONSTRUCTION OR INSTALLATION OF THE SANITARY SEWER SYSTEM IMPROVEMENTS OR ADDITIONS.

4.3 Abandonment of Sanitary Sewer Laterals shall include:

- A. Excavation as near as practical to the edge of the road, without undercutting the road of curb;
- B. Cutting of the of the upstream service lateral pipe;
- C. Insertion of a snug fitting plug of ball as far into the downstream service lateral as possible, but no closer than 5' from sewer main. Plug of ball to be a tight enough fit to prevent any cement type flowable material from getting to the sewer main;
- D. Fill pipe above the plug/ball to include a tether in the service lateral pipe to ensure it remains in place during the addition of the flowable cement material and to hold the plug/ball in place for all time;
- E. Placement of a water tight cap or plug at the upstream end (fernco or equivalent)
- F. The City, Paul Naugle (815) 970- 5329m or designated employee shall be contacted 48 hours prior to initiation of abandonment work to ensure proper compaction, and contractor to provide accurate as-built information to information to be signed off by the City as part of the permit.

Article 5

STORMWATER MANAGEMENT

5.1 StormWater Management Systems, Erosion Control, Wetland Protection, Floodplain Protection and Protection of Riparian Environments. Every Subdivision/planned development shall be provided with a stormwater management system, erosion control, wetland protection, floodplain protection in accordance with the standards and requirements set forth in this Ordinance.

5.2 The Watershed Plans. Any watershed, wetland and floodplain protection plan approved by the City Council shall also be considered when reviewing Subdivision/planned development plans.

5.3 Definitions:

CHANNEL: Any river, stream, creek, brook, branch, natural or artificial depression, ponded area, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or manmade drainage way, which has a defined bed and bank or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.

CONDUIT: Any channel, pipe, sewer or culvert used for the conveyance or movement of water, whether open or closed.

DETENTION BASIN: A facility constructed or modified to provide for the temporary storage of stormwater runoff and the controlled release by gravity of this runoff at a prescribed rate during and after a flood or storm.

DETENTION TIME: The mean residence time of stormwater in a detention basin.

DEVELOPMENT: Any man-made change to real estate, including:

- a) Preparation of a plat of subdivision;
- b) Construction, reconstruction or placement of a building or any addition to a building;
- b) Installation of a manufactured home on a site, preparing a site for a manufactured home, or installing a travel trailer on a site for more than 180 days;
- d) Drilling, mining, installation of utilities, construction of roads, bridges, or similar projects;
- e) Filling, dredging, grading, construction of levees, clearing, excavating, paving, or other non-agricultural alterations of the ground surface;
- f) Storage of materials or deposit of solid or liquid waste; and
- g) Any other activity that might alter the magnitude, frequency, deviation, or velocity of storm water flows from a property.

Development does not include maintenance of existing buildings and facilities such as resurfacing of roadways when the road elevation is not increased, or gardening, plowing, and traditional agricultural practices that do not involve filling, grading, or construction of levees. Additionally, development does not include fence installation, pole placement, drilling or other minor auxiliary construction activity which does not affect stormwater runoff rates or volumes.

DRY DETENTION BASIN: A detention basin designed to drain completely after temporary storage of storm water flows and to normally be dry over the majority of its bottom.

EROSION: The general process whereby earth is removed by flowing water or wave action.

EXCESS STORMWATER RUNOFF: The volume and rate of flow of stormwater discharged from an urbanized area which is or will be in excess of that volume and rate which pertained before urbanization.

FLOODPLAIN: That land adjacent to a body of water with ground surface elevations at or below the base flood or the 100-year frequency flood elevation. The floodplain is also known as the Special Flood Hazard Area (SFHA).

FLOOD RATE INSURANCE MAP (FIRM): A map prepared by the Federal Emergency Management Agency of HUD that depicts the special flood hazard area (SFHA) within a community. The map includes insurance rate zones and floodplains and may or may not depict Regulatory Floodways.

FLOODWAY: The channel and that portion of the floodplain adjacent to a stream or watercourse which is needed to store and convey the anticipated existing and future 100-year frequency flood discharge with no more than a 1.0 foot increase in stage due to any loss of flood conveyance or storage and no more than ten percent (10%) increase in velocities. *Each municipality should reference the FIRMs which include the municipality and the surrounding areas.*

HYDROGRAPH: A graph showing the flow with respect to time for a given location on a stream or conduit.

INFILTRATION: The passage or movement of water into the soil surfaces.

MAJOR DRAINAGE SYSTEM: That portion of a stormwater management system needed to store and convey flows beyond the capacity of the minor drainage system. Where manmade, it is designed to handle stormwater runoff from the 100-year frequency event.

MINOR DRAINAGE SYSTEM: That portion of a stormwater management system designed for the convenience of the public. It consists of street gutters, storm sewers, small open channels, and swales. Where manmade, the minor conveyance system is designed to handle stormwater runoff from the 10-year frequency event. It also consists of cross-road culverts which shall be designed to handle stormwater runoff from the 50-year frequency event.

NATURAL: Conditions resulting from physical, chemical, and biological processes without intervention by man.

OVERLAND FLOW ROUTE: An area of land which conveys stormwater runoff for all events up to and including the base flood event.

PERSON: An individual, public or private corporation, government, partnership, or unincorporated association.

POSITIVE DRAINAGE: Provision for overland paths for all areas of a property including depressional areas that may also be drained by storm sewers.

PROPERTY: A parcel of real estate.

REDEVELOPMENT: Any activity, alteration, or change in land use that is undertaken on previously developed land.

REGISTERED PROFESSIONAL ENGINEER: An engineer in the State of Illinois, under the Professional Engineer Act of 1989, 225 ILCS 325/1-49.

RELEASE RATE: The rate at which stormwater runoff leaves the property.

RETENTION BASIN: A facility designed to completely retain a specified amount of stormwater runoff without release except by means of evaporation, infiltration, emergency bypass or pumping.

STORM SEWER: A closed conduit for conveying collected stormwater.

STORMWATER MANAGEMENT PLAN: A plan, including engineering drawings and supporting calculations, which describes the existing stormwater drainage system and environmental features, as well as the stormwater management system and environmental features which are proposed after development of a property.

STORMWATER MANAGEMENT SYSTEM: The collection of natural features and man-made facilities which define the stormwater management for a development. Examples include major and minor drainage systems, stormwater storage facilities, BMPs, etc.

STORMWATER RUNOFF: The waters derived from melting snow or rain falling within a tributary drainage basin which are in excess of the infiltration capacity of the soils of that basin, which flow over the surface of the ground or are collected in channels or conduits.

TRIBUTARY WATERSHED: All of the land surface area that contributes runoff to a given point.

WET DETENTION BASIN: A detention basin designed to maintain a permanent pool of water after the temporary storage of stormwater runoff.

WETLAND: An area inundated or saturated by surface water or ground water at a frequency or duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.

5.4 Stormwater Management Systems. All subdivisions and planned developments shall be so designed that streets, blocks, lots, parks and other public grounds are so located and laid out as to preserve and utilize natural streams, channels and detention basins, including, whenever possible, locating the largest streams and flood plains within proposed public lands.

A. Channel and/or Waterway Straightening. Meandering channels and/or waterways shall not be straightened or changed.

B. Within-Block Drainage. At least one continuous easement shall be provided along all rear and side lot lines in each block to accommodate utility lines and drainage. No person or entity shall regrade any portion of any property subject to a drainage easement without written permission from the City Engineer. No accessory buildings may be built or located on any such easement. Such utility-drainage easement shall be at least ten feet wide (typically five feet on each adjoining lot). All lots shall be so graded as to provide positive surface drainage. If proper surface drainage cannot be accomplished by grading, an underground storm sewer must be provided.

C. Storm Sewer Outfalls. Outfalls shall be so designed that when the receiving stream is in full flood stage, the storm sewer will continue to drain the service area at its design capacity.

D. Streets Designed as Channels. Grades and cross-sections of streets shall be designed and constructed as to convey stormwater runoff in excess of the 10-year rainfall intensity. Streets shall be so designed and constructed as to carry a 100-year intensity rainfall at a depth no greater than six inches at the centerline of the street. The storm sewer system shall be so designed and constructed as to collect and convey 10-year rainfall intensity.

E. Curb and Gutter Requirements. Where required, street pavements in Subdivisions shall be provided with integral curbs and gutters. Drainage structures, where required, shall be provided in the curbs and gutters to receive drainage for discharge through the storm sewer system.

F. Temporary Storage in Streets. Temporary stormwater storage will be permitted in public streets to accommodate the 100-year rainfall intensity. Such storage shall not exceed six inches in depth at the street centerline.

G. Street Pavement Crowns. Crowns shall not be lower than the established 100-year high-water elevation of any stream, flood water runoff channel or detention basin to which its stormwater runoff is tributary, or two feet above in the case of arterial streets.

5.5 Storm Sewer Design Standards. All storm sewers within Subdivisions and planned developments shall comply with the following minimum design standards.

A. Method of Calculation. Minor stormwater systems shall be sized to convey runoff from the tributary watershed under fully developed conditions consistent with the design requirements of the City of Genoa.

- 1. ILLUDUS
- 2. Rational Method
- 3. TR-55 (SCS Method)

B. Minimum Coefficients. Coefficients for each method shall be as follows:

- 1. ILLUDUS

Residential districts by average lot size:

1/8 acre or less	90
¼ acre	83
1/3 acre	81
½ acre	80
1 acre	79
2 acres	77

Multi-family residential, including Townhouses 90

Commercial, business, office/research, industrial,
Institutional and public buildings 94

- 2. Rational Method

Single Family => 1 acre	C = 0.30*
Single Family < 1 acre	C = 0.40*
Multiple Family (including townhouses)	C = 0.45*

Commercial, business, office/research, industrial,
Institutional and public buildings C = 0.85*

*Precedent rainfall condition not considered

- 3. TR-55 (SCS Method) (Same as ILLUDUS)

The City Engineer will review coefficients for all drainage areas at the Preliminary Plat/Plan stage.

C. Minimum Intensities. The minimum intensity for the design of storm sewers and inlets shall be 10-year rainfall intensity with an initial concentration time of twenty (20) minutes for the rational method or its equivalent. The maximum velocity acceptable through the sewer is eight (8) feet/second. All stormwater management system designs shall be routed through the entire Subdivision/planned development.

- D. Capacity of Drainage Structure Frames and Grates.** Calculations shall be provided as part of the final engineering plans to assure that drainage structure grates have adequate capacity to accommodate the design flows at the designed intensity and runoff coefficients. The design calculations shall be performed and reviewed in accordance with the Civil Engineering Standard C-35 to check grate capacity. The formula used shall be:

$Q = AC \text{ the square root of } 2gh$

Q = Calculated Grate Capacity (CFS)

A = Area of Frame Opening (Square Feet)

c = Entrance coefficient (0.8 for rounded edges) (0.6 for sharp edges)

g = 32.2

h = depth of water allowed over grate (feet)

The head (h) for calculating grate capacity shall never be considered greater than six (6) inches above the street centerline. At no time shall the water depth over the inlet in a yard or parking area be less than one foot below the lowest opening in an adjoining building where the water may have access to or flood such building.

- 5.6 Storm Sewer, Pipe culvert and Structure Standards.** Materials permitted for use as storm sewers, pipe culverts and related structures shall meet the following minimum standards for materials and size:

A. Storm Sewer Materials. Materials may be either:

1. Reinforced concrete culvert, storm drain and sewer pipe conforming to Article 740.03 of the current Illinois Department of Transportation Standard Specifications for Road and Bridge Construction in ROW, or
2. Polyvinyl chloride pipe (PVC) conforming to Article 740.14 of the current Illinois Department of Transportation Standard Specifications for Road and Bridge construction acceptable in rear yard.
3. Ductile Iron Pipe or other water main quality pipe acceptable, conforming to ANSI/AWWA C 150/A21.50 and A21.51.

The applicable table in Article 542.03 of the referenced specification for the two stated materials shall control the use of such material.

4. N12 may be used only with the written approval of the Director of Public Works or his/her designee. NO CORRUGATED METAL PIPE WILL BE ACCEPTED.

- B. Structure Materials and Connections.** Manholes, catch basins, frames, grates, end sections and headwalls shall conform to the following minimum standards and the City of Genoa's Public Works Department.

1. Manholes and catch basins conforming to Section 602 found in the current Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, shall have offset cones.
2. End sections conforming to Section 542.07 found in the current Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.
3. Frames and grates may be gray iron or ductile iron conforming to Section 604 found in the current Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.
4. Headwalls shall conform to Section 542.07 found in the current Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.
5. Watertight flexible pipe-to-manhole connector shall be used in the connection of storm sewer pipe to precast manholes or other structures. Use on storm sewer is required when under pavement, or any driving surface.
6. The connector shall be watertight, flexible pipe-to-manhole connector. This shall be installed in the connection of the storm sewer manholes. Material to be used will be PSX-DIRECT DRIVE as manufactured by Press-Seal Gasket Corporation, Fort Wayne, Indiana, or approved equivalent.
7. The connector assembly used will be relied upon to assure a flexible, watertight seal of the pipe to structure. The connector shall consist of a rubber gasket, an internal expansion sleeve, and one or more external compression take-up clamps. Approved materials for the connector shall be natural or synthetic rubber with Series 300 non-magnetic stainless steel. No plastic components shall be permitted.

C. Sealing Materials for Joints, Connections, and Various Assemblies.

1. Butyl-rubber based sealant to be used for adhesion/cohesion on concrete, metal, and recommended recycled plastic. Material used to meet or exceed ASTM C 990- Standard specification for joints for concrete pipe, manholes, and precast box sections; section 6.2., and AASHTO M 198, joints for circular concrete sewer and culvert pipe. Product used to be same as or equivalent to EZ-STICK, from Press-Seal Gasket Corporation.

D. Iron Frames, Lids, and Accessories.

(NO SQUARE BOTTOM FRAMES SHALL BE USED ON ANY ROUND STRUCTURES)

1. B6:12 curb installation

Frame: Neenah R-3010 or Equivalent

Back: Neenah R-3010 or Equivalent

Grate: Neenah R-3010 – Type A or Equivalent

(If slope is greater than 3% use Type L vane) or Equivalent

2. Depressed B6:12 installation

Frame: Neenah R-3238 or Equivalent

Grate Neenah R -3238-C or Equivalent

3. Pavement or Yard Installation (Solid Lid)

Frame: Neenah R-1713 or Equivalent

Lid: Neenah R-1713 Flat Heavy Duty or Equivalent

4. Pavement Installation (Open Lid, to be used only in parking lots)

Frame: Neenah R 2504 or Equivalent

Lid: Neenah R 2504 D Flat Heavy Duty or Equivalent

5. Yard Installation (Open Lid, low flow) Non driving surface.

Frame: Neenah R 4340-B or Equivalent

Heavy Duty R 4352 gravel areas, **driving surface.**

6. Yard Installation (Open Lid, high flow)

Frame: Neenah R-4340-A

E. Adjustment Rings

1. Neenah R-1979 Series or Equivalent

2. Rubber recycled adjustment rings are to be used on all roadway applications, not to exceed 3" as recommended by manufacturer, same as or equivalent to: INFRA-RISER, (registered trademark) available at East Jordan Iron Works. Adjustment rings when needed are to be molded high density polyethylene as defined in ASTM specification D4976. Rings are to be equivalent to LADTECH (registered trademark) or equal. Concrete rings may be used with the permission of the Director of Public Works, or Utility Supervisor, in writing.

3. All installations shall receive compaction at 4" lifts around entire structure, mastic, external chimney seal, and hydraulic cement are to be used. Any structures must have a recycled rubber adjusting ring for the top ring (only top ring to be rubber). All other adjustments to meet the requirements above and specifications for the City of Genoa. Flat tops shall have a 4" ring cast into the top. **NO EXCEPTIONS TO THE ABOVE WITH OUT WRITTEN APPROVAL FROM THE DIRECTOR OF PUBLIC WORKS.**

F. Pipe Culvert Materials. Pipe culvert materials shall be reinforced concrete culvert pipe conforming to Article 740.03 of the current Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.

5.7 Minimum Sized Storm Sewers. All storm sewers shall be no less than 12" in diameter regardless of the size of area being served, except when the storm sewer is used as a restrictor to control discharge from a detention/retention facility.

5.8 Minimum Sized Restrictors. Restrictors for the control of release rates from detention/retention facilities in no case shall the restrictor be less than four (4) inches in diameter.

5.9 Location of Storm Sewer Structures. Structures receiving stormwater shall be located in accordance with the following minimum standards. Quantities of runoff, slope of surface areas and general configuration of drainage patterns may require additional structures.

A. Drainage Structures in Streets. Structures shall be located at all low points and at such other locations as may be required by the street gradient and area to be served. Structures shall be so placed that in no case shall water flow exceed four-hundred (400) feet for streets having a slope of three percent (3%) or less, or three-hundred (300) feet for streets having a slope greater than three percent (3%). Structures, which are not located at low points, shall be equipped with vaned grates.

B. Drainage Structures in Parking or Non-Grassed Areas. Structures shall be located so that stormwater runoff shall not service an area greater than 20,000 square feet. Modifications to this requirement may be allowed depending on the configuration of the parking facility.

C. Drainage Structures in Open Space Grassed Areas. Structures shall be so located in swales as to capture the stormwater runoff. Such structures shall be so located in non-paved areas that stormwater runoff will not exceed two-hundred (200) feet.

D. Drainage Structures in Residential Rear Yard Areas. Structures shall be so located within easements on or adjoining the rear lot lines of lots that stormwater runoff will be intercepted by such drainage structures. Drainage structure locations shall meet the following criteria:

1. For rear lot line grades equal to or greater than one percent (1%) but less than or equal to two and one-half percent (2.5%) – A drainage structure shall be available on every lot within twenty-five (25) feet of one of its rear lot corners.
2. Curb and gutter sections of a street shall be considered the same as a drainage structure regarding the interception of stormwater runoff. The distance that stormwater runoff must flow in the gutter section is not considered as part of the maximum distance between drainage structures for rear lot line drainage configurations.
3. Drainage Structures shall be so located as to discourage rear to front lot drainage configurations.
4. No storm sewer in excess of 12" I.D. shall be within 10' of any existing or proposed basement and or foundation. No storm sewer shall be installed of any size within 7' of any existing or proposed basement and or foundation. Any storm within 10' of any existing or proposed basement and or foundation shall not exceed a maximum of 3' wide bedding. Trench areas between any proposed or existing foundations and or basements are to be backfilled with a minimum of two to four (2-4) feet width of soil on each side of trench with a minimum of 60% colloidal clay, or an equivalent. Areas to be tamped according to trench specifications. In these areas with storm sewer pipe within a foundation/basement area, will be required

to be inspected and signed by City Public Works Department, and the City's Building inspector will need to be present during this the backfill process.

5.10 Stormwater Detention. Stormwater detention shall comply with the following requirements:

- A. Areas Which Require Detention.** Stormwater runoff from all new Subdivisions or planned developments shall comply with the site runoff storage requirements provided in this Ordinance.
- B. Existing Detention Facilities.** In the event that a Developed Area is serviced by an existing detention facility, the requirements for onsite detention may be modified by the City Council in accordance with an approved engineering plan. "Developed Area" shall mean the total area of land owned or under the control of the Subdivider/Developer unless the Subdivider/Developer can demonstrate that designated portions of such land will never be developed.
- C. Rainfall Frequency.** Detention requirements shall be calculated on the basis of a 100-year frequency rainfall as defined by the Illinois State Water Survey, Bulletin 70. The detention volume required shall be equal to the runoff for a 100-year frequency rainfall, for the Subdivision/planned development under consideration and tributary to the reservoir, less the allowed discharge volume at the approved release rate.
 - 1. Detention volumes shall be calculated considering precedent rainfall conditions.
 - 2. Storage Capacity: Sufficient storage shall be provided such that the probability of the post development release rate exceeding 0.1 (1/10) CFS/acre of development shall be less than one percent (1%) per year.
 - 3. Design runoff volumes for detention shall be calculated using the continuous event hydrograph method.
- D. Method of Detention Volume Calculations.** Detention volume calculations shall be performed using one of the following methods for the proposed project site in its developed state. Calculation methods are listed in order of preference and acceptability.

The event hydrograph methods used to calculate design runoff volumes must be either HEC-1 SCS runoff method with outlet routing option, TR-20 with outlet control routing option, or TR-55 tabular method. Event methods shall incorporate the following assumptions.

- 1. Antecedent moisture condition = 2; and
- 2. Huff of SCS Type II rainfall distribution; and
- 3. Twenty-four (24) hour duration storm with a one percent (1%) probability of occurrence in any one (1) year as specified by Illinois State Water Survey Bulletin 70 northeast sectional rainfall statistics; and

4. In situations where a parcel is phased for development, the detention calculations shall be made for the entire parcel and not on each phase separately. However, the engineering plans shall provide for detention for the first phase and each succeeding phase, as it will be constructed. The centralization of detention facilities in large private open space areas shall be encouraged.

E. By-Pass Flows. Stormwater management systems shall have adequate capacity to convey the flow from all upstream areas, whether developed or undeveloped, for 100-year rainfall intensity. The by-pass flow rate shall be computed utilizing a runoff coefficient as approved by the City Engineer, but not less than 0.35 (Rational Method) or $C = 77$, TR 20, TR 55, or ILLUDUS Methods. Allowances will be made for upstream detention when such upstream detention and release rates have previously been approved by the City.

5.11 Detention Basin Construction. Detention basins may be constructed adjacent to existing channels as separate basins or lakes provided there is in place an adequate By-Pass Channel for such existing channel. Detention basins shall not be permitted directly “on line” with existing channels, creeks or streams. No detention shall be permitted within any front or side yard, or the usable portion of a rear yard that is defined as being within thirty (30) feet of the residence/attached garage structure.

A. Release Structures. Release structures for basins more than two (2) feet deep shall be designed and constructed with sloped bar screens or grates with access thereto so debris can be removed easily during the rain event. For basins less than two (2) feet deep with restrictor pipes twelve (12) inches or less in diameter, a manhole shall be required on each end of the restrictor pipe so that it can be unplugged safely.

B. Detention Basin Bottom. Detention basins may be constructed with either a wet or dry bottom facility or as a wetland. No rip rapped bottoms shall be allowed. Requirements for each type of facility are as follows:

1. Dry Bottom Detention Facilities shall be constructed with slopes not less than one percent (1%) and side slopes no steeper than four (4) feet horizontal to one (1) foot vertical.

Underdrain systems shall be required on all dry bottom basins having a bottom slope of less than two percent (2%). The underdrain pipes shall be perforated pipe no less than four (4) inches in diameter. The pipe shall be set in a trench at least two (2) pipe diameters wide with stone under the pipe to a depth of at least half the pipe diameter. Stones shall extend over the pipe no less than one (1) pipe diameter with six (6) inches of topsoil over the trench.

2. Wet Bottom Detention Facilities shall be encouraged when such facilities are visible from a collector street. A wet bottom detention facility shall have no less than twenty-five percent (25%) of its surface area at least ten (10) feet deep with the remaining portion being no less than five (5) feet deep. The embankment slopes, from the normal water level down, shall be no less than three (3) feet horizontal to one (1) foot vertical and embankment slopes

above the normal water level shall be no less than four (4) feet horizontal to one (1) foot vertical. Six (6) feet horizontal to one (1) foot vertical safety ledge shall be created at the normal water level. Embankment protection shall be required along the normal water line to reduce erosion and stabilize the embankment.

3. City standards and requirements shall apply in all cases where another agency or private body (e.g. A homeowners' association) will have future control over a detention facility.
 4. The inlet and outlet structures from the pond or lake shall be protected with grating and rails for safety enhancement. For safety, one (1) foot of free board shall be required.
 5. Wet bottom detention areas which do not have a continuous fresh water flow shall be treated either mechanically (i.e. an aerator) or chemically to control algae growth.
 6. Wetland Base Detention Facilities shall be encouraged where soils are appropriate. Wetlands help purify water quality and provide recharge to underground systems. Basins shall be enhanced with wetland plants.
- C. Drain Down Time.** All grassed areas of wet or dry bottom detention basins shall be so designed as to drain down within forty-eight (48) hours after such basins are filled to the 100-year flood level.

Calculations shall be submitted to show the drain down time. In the event that a detention basin (dry bottom, wet bottom or wetland area) discharges directly into a receiving stream, or is influenced by the backwater of a receiving stream, data regarding the hydraulics on the receiving stream or its impact on the drain down time of the detention facility shall be provided by the Subdivider/developer.

- D. Detention Basin Release and Outlet.** All outlets of detention facilities shall be via storm sewers or drainage swales located within easements dedicated to the City of Genoa.

5.12 Underdrains. Underdrains, when required on a site, shall meet the minimum requirements in the City of Genoa's Building Department.

- A. Underdrain Pipe Materials.** Materials shall be constructed of one of the following permitted materials:

1. Perforated Polyvinyl Chloride (PVC) Pipe conforming to Article 740.14 of the current Illinois Department of Transportation's Standard Specification for Road and Bridge Construction.
2. Perforated Corrugated Polyethylene (PE) Tubing conforming to Article 740.20 of the current Illinois Department of Transportation's Standard Specification for Road and Bridge Construction.
3. N12 may be used only with the written approval of the Director of Public Works or his/her designee. NO CORRUGATED METAL PIPE WILL BE ACCEPTED.

4. All joints between precast elements, adjusting rings, and manhole frames shall be set in place with a butyl rubber joint sealant or a rubber gasket. A 9" wide polyethylene external seal shall be applied to all structure joints.
5. A maximum of two (2) adjustment rings for a maximum of 8" is allowed. The top adjustment ring shall be made of recycled rubber.
6. External chimney seals are to be installed on all structures which will capture at least 4" of the structure frame, all of the adjusting rings, and 4" of the upper cone section.
7. Pipe connections to be made with the use of precast openings. Connections to existing structures shall be made with the use of Machine-cored openings. The internal and external pipe penetrations shall be tuck-pointed using hydraulic cement.

City of GENOA

STANDARD
SPECIFICATIONS
& DETAILS
FOR
CONSTRUCTION
AND
ESTIMATING

JMS 8/2019

City of Genoa, Public Works Department, 100 Madison St., Genoa, Illinois 301035

Memorandum

To: Contractors, Engineers, & Developers

Date: March 9, 2019

Re: **Disclaimer on use of Specifications & Details**

This letter is to caution you on the use of the City of Genoa standard details and specifications. This information is provided to you with good faith, with efforts of the City of Genoa to standardize the construction of its utilities and assets. The files are in Adobe Acrobat PDF format for viewing and insertion into documents. These files were created in accordance with City of Genoa Unified Development Ordinance, and are not to be altered in any way other than scale of the overall file. If it is found during review or construction that the document have been altered, the project will be immediately closed out or shut down, and corrective action will be considered on a case by case scenario. If you have any questions regarding this letter please feel free to contact the Department of Public Works.

Respectfully Submitted

Janice Melton
100 Madison St.
Genoa, Illinois 60135
815-784-2327

City Contacts

Public Works Department

100 Madison St.
Genoa, Illinois 60135
Phone: 815-784-2327
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email: pnaugle@genoa-il.com

City Hall Administration

333 E. First St.
Genoa, Illinois 60135
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Fax: 815-784-2988

Sewer, Street, and Forestry Supervisor

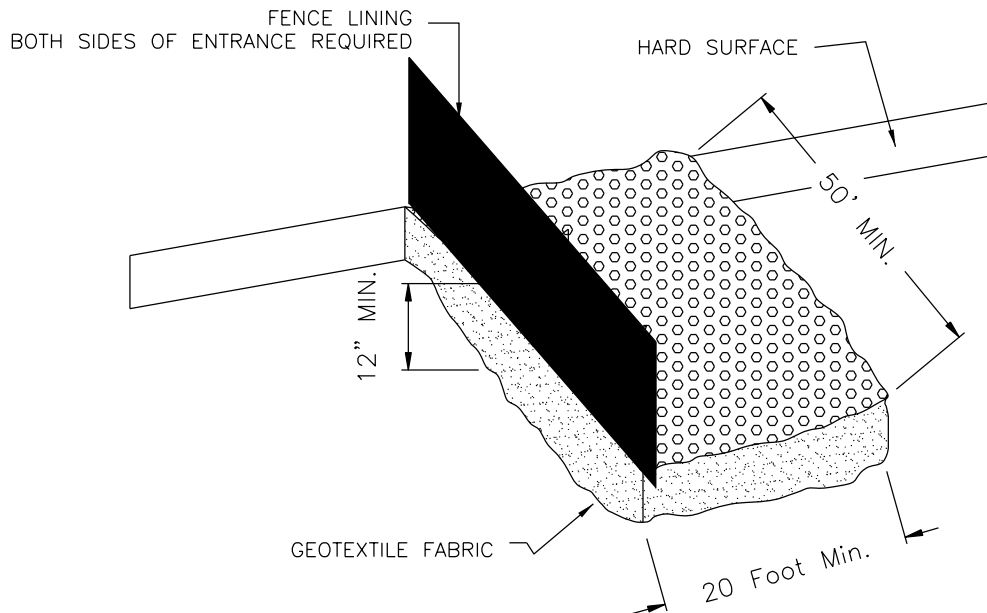
Janice Melton-Sheppard
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815-784-7131
email: jmelton@genoa-il.com

Finance Director

Janis Tures
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Phone: 815-784-7103
email: jtures@genoa-il.com

City Manager

Alyssa Seguss
333 E. First St.
815-784-7106
aseguss@genoa-il.com



NOTES:

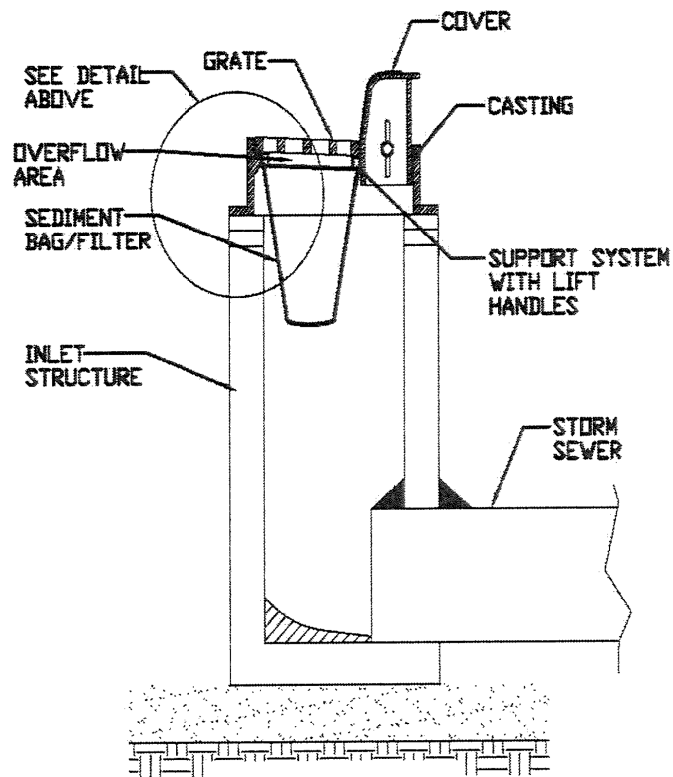
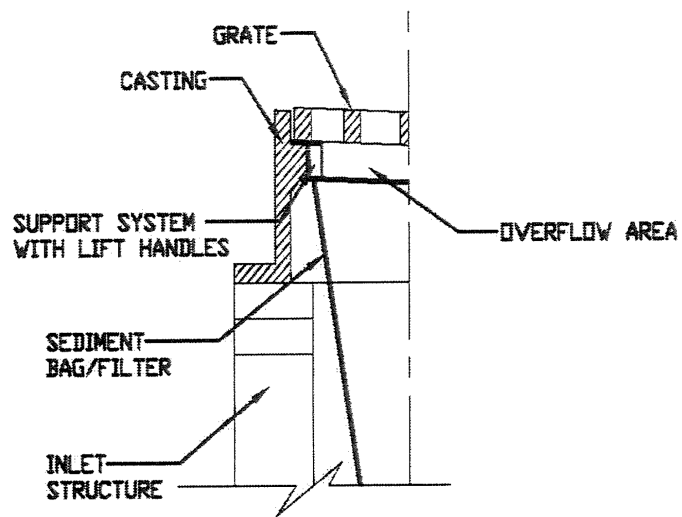
1. STONE SIZE – USE 3" STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN TWELVE (12) INCHES.
4. WIDTH – TWENTY (20) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH – WILL BE PLACED OVER ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5-1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. SILT FENCE SHALL LINE BOTH SIDES OF THE ENTRANCE WAY FOR THE ENTIRE LENGTH. THIS WILL ENCOURAGE THE FULL USE OF THE DESIRED ENTRANCE.

CONSTRUCTION ENTRANCE

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTE:

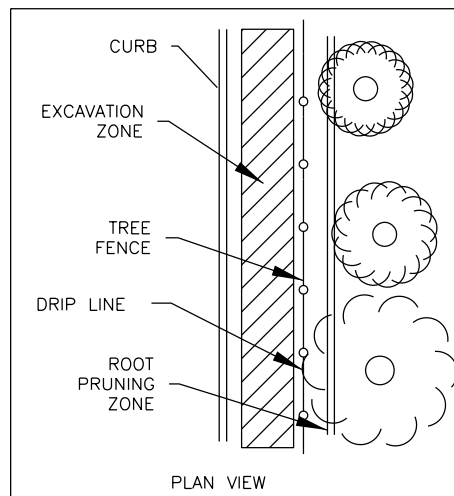
1. See City of Genoa Approved Product List.

INLET FILTER PROTECTION

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

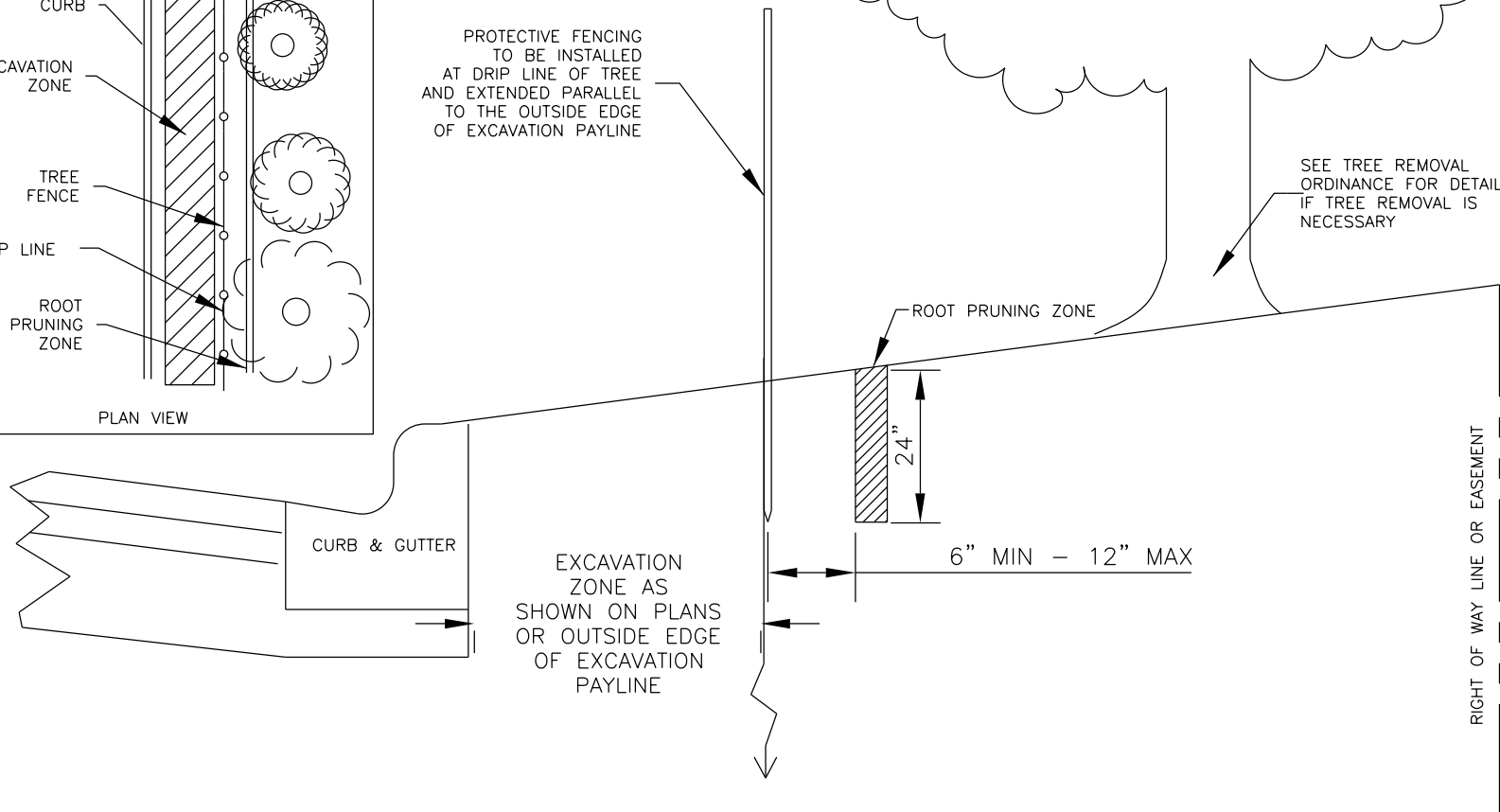
Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



PROTECTIVE FENCING
TO BE INSTALLED
AT DRIP LINE OF TREE
AND EXTENDED PARALLEL
TO THE OUTSIDE EDGE
OF EXCAVATION PAYLINE

TREES DRIP LINE IS THE FURTHEST
OUTSIDE EDGE OF THE OUTER MOST BRANCH

SEE TREE REMOVAL
ORDINANCE FOR DETAILS
IF TREE REMOVAL IS
NECESSARY



NOTES:

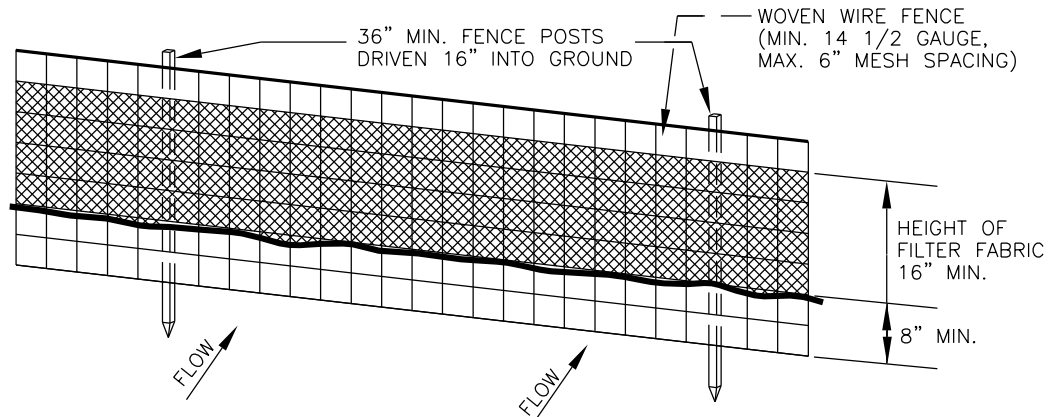
See City of Genoa Arboriculture Specification Manual for further instruction.

TREE PROTECTION & ROOT PRUNING

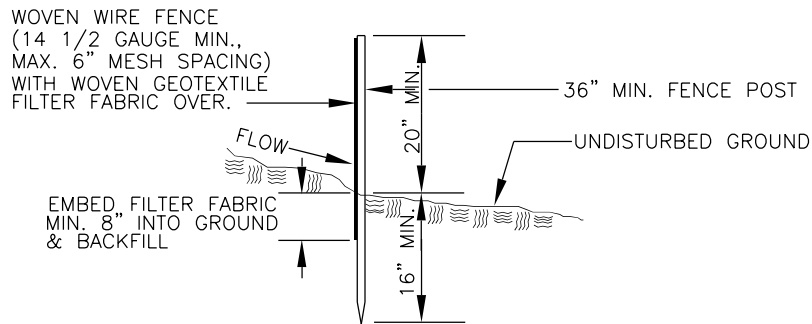
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



PERSPECTIVE VIEW



SECTION

NOTES:

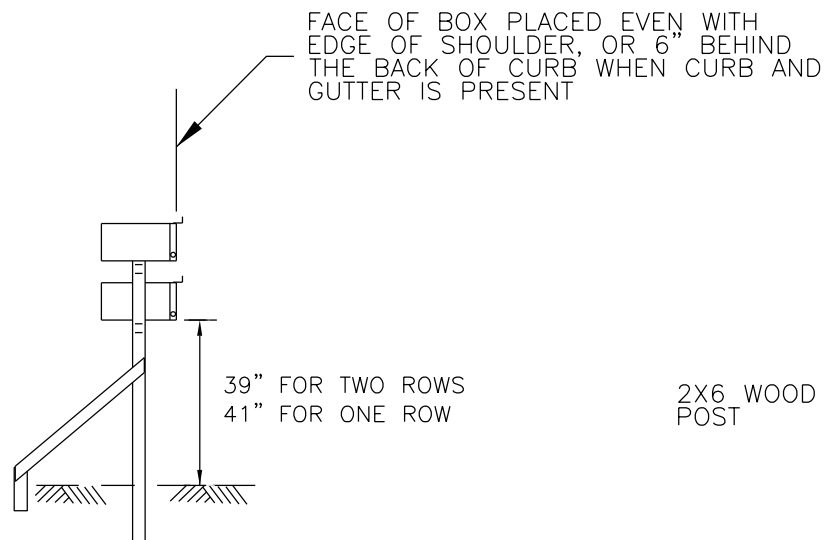
1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER FABRIC TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE OR WHEN COLLECTED SOIL HAS REACHED A DEPTH OF $\frac{1}{2}$ THE FABRIC HEIGHT.
5. SEE CITY OF GENOA PRODUCT SPECIFICATIONS.

SILTATION CONTROL FENCE

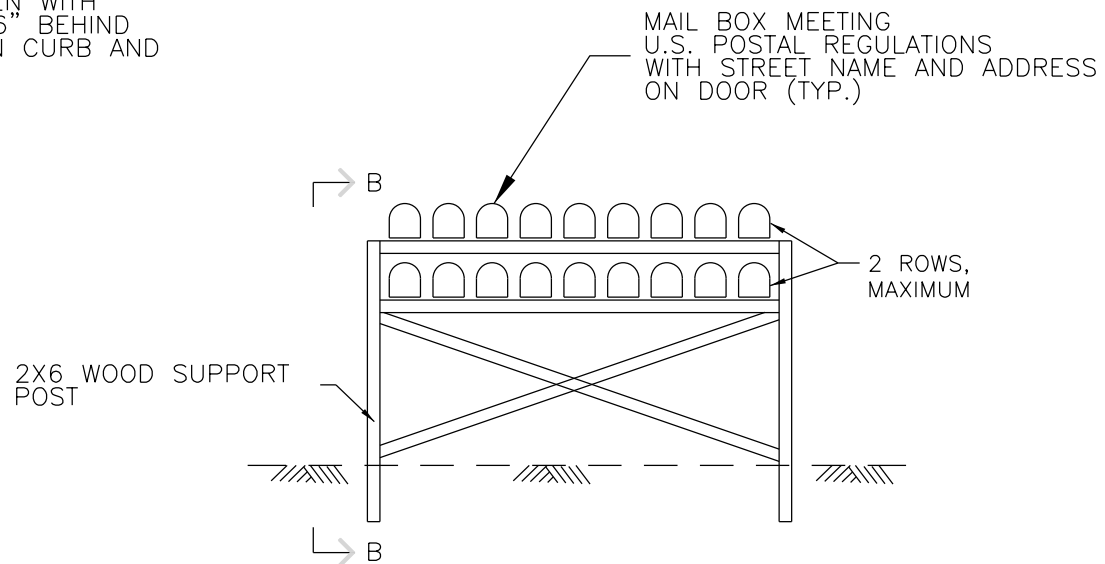
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



SECTION B-B



NOTE:

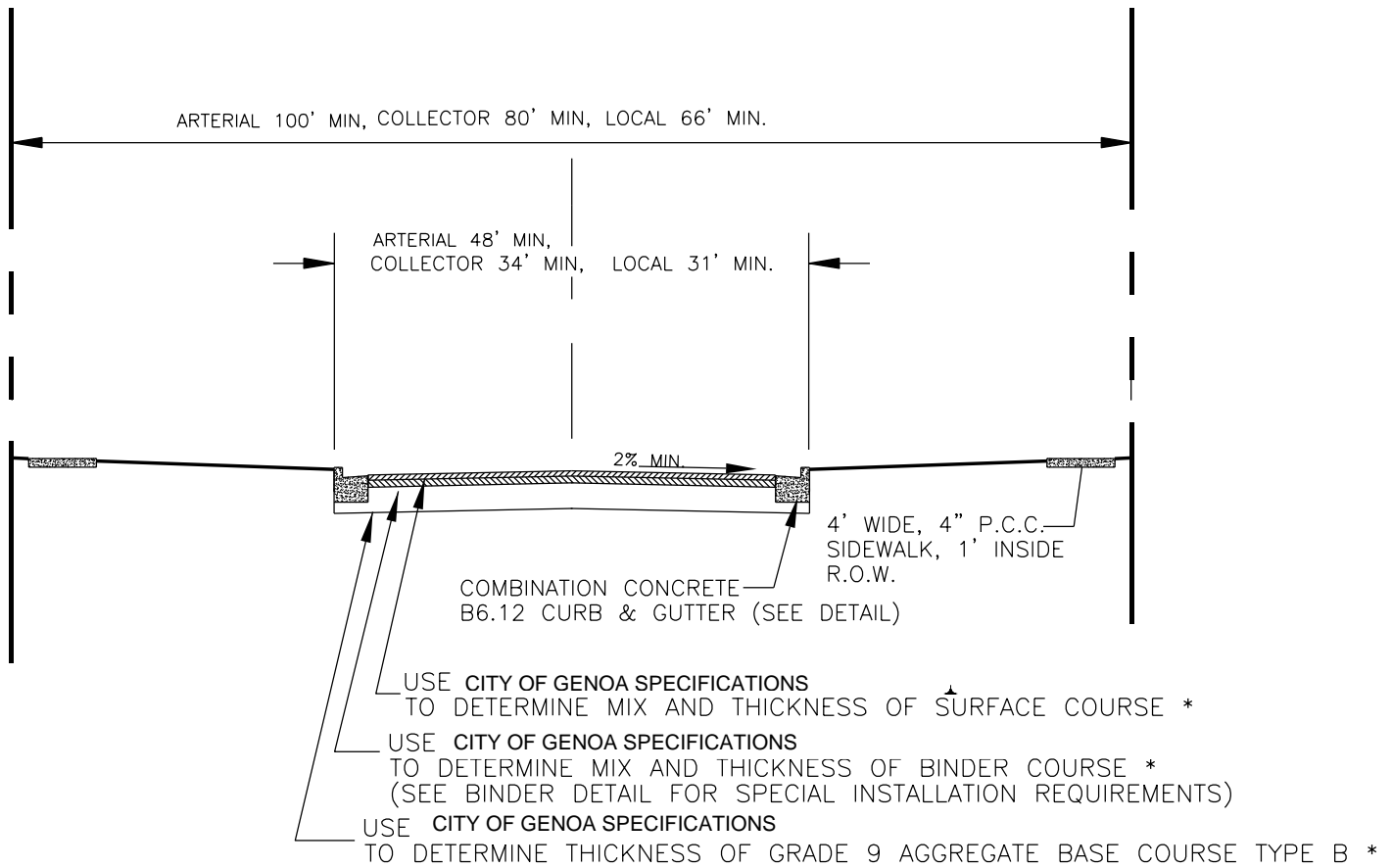
1. TEMPORARY BOXES TO BE PLACED AT THE DISCRETION OF THE GENOA POST MASTER.

TEMPORARY GANG MAIL BOX INSTALLATION

City of Genoa

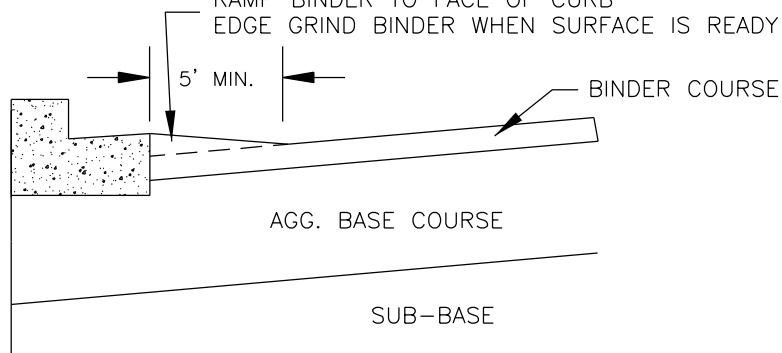
Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

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Fax 815-784-4271
www.genoa-il.com



* PAVEMENT STRUCTURE TO BE CONFIRMED BY GEOTECHNICAL EXPLORATION.

**** THE DETAIL BELOW IS USED WHEN BINDER IS EXPOSED OVER 30 DAYS ****
 RAMP BINDER TO FACE OF CURB
 EDGE GRIND BINDER WHEN SURFACE IS READY FOR INSTALLATION

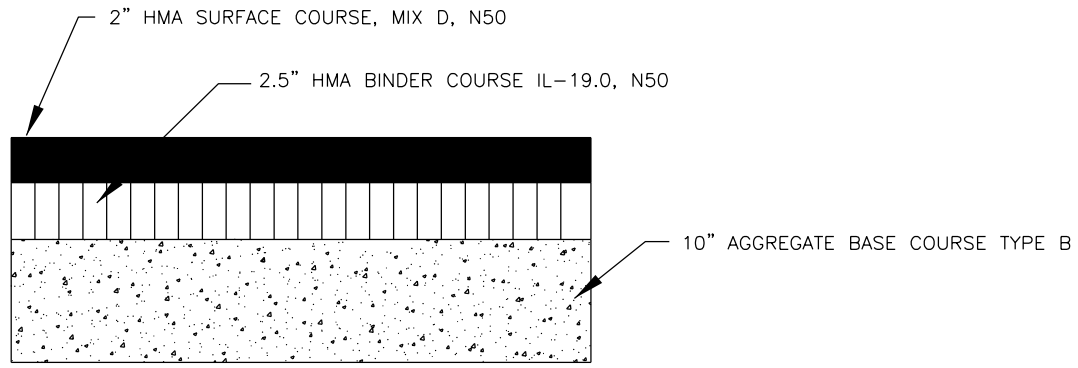


ROAD CROSS SECTION

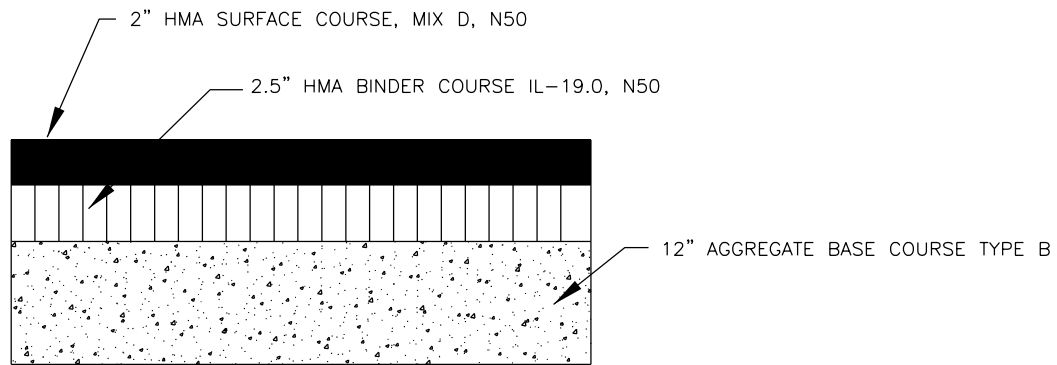
City of Genoa

Public Works Dept.
 100 Madison St.
 Genoa, Illinois 60135

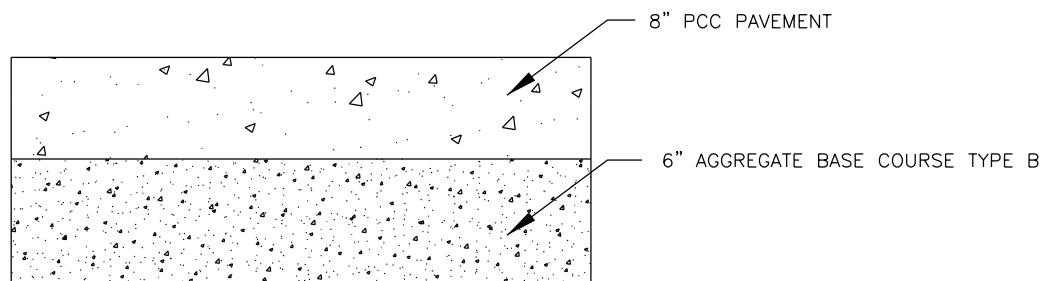
Tel. 815-784-2327
 Fax 815-784-4271
www.genoa-il.com



TYPICAL LOT DESIGN



HEAVY DUTY/TRUCK TRAFFIC AREAS



LOADING DOCK AREA

PARKING LOT PAVEMENTS

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

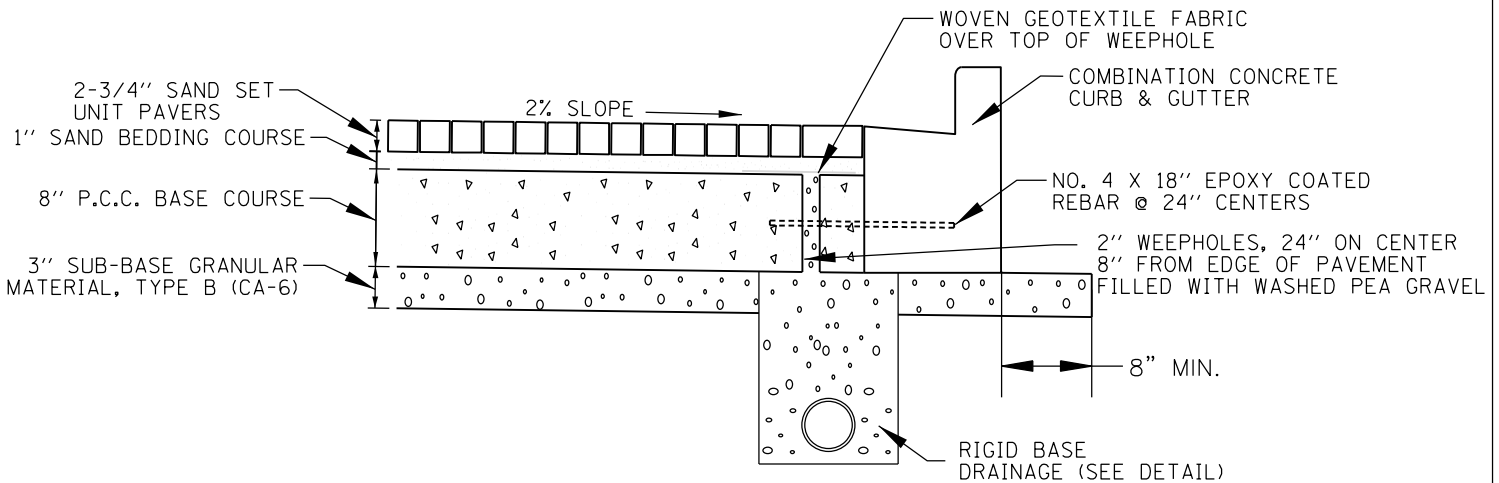
COMBINATION CONCRETE
CURB & GUTTER

8" CONCRETE CROSSWALK OR
12" CONCRETE STOP BAR
WHERE INDICATED

4" x 8" UNIT PAVER
90° HERRINGBONE PATTERN

4" x 8" UNIT PAVER
SOLDIER COURSE (TYP)

12" CONCRETE BORDER



NOTES:

1. AGGREGATE FOR BEDDING SHALL CONFORM TO THE GRADATION FOUND IN TABLE BELOW.
2. FINE AGGREGATE FOR JOINT SAND REPLACEMENT SHALL BE TYPE HP POLYMERIC SAND.
3. MAXIMUM PAVER JOINT WIDTH SHALL BE 1/8".
4. SEE APPROVED CITY OF GENOA PRODUCTS LIST FOR MANUFACTURER AND MODEL NUMBERS.

GRADING REQUIREMENTS FOR BEDDING AND JOINT SAND

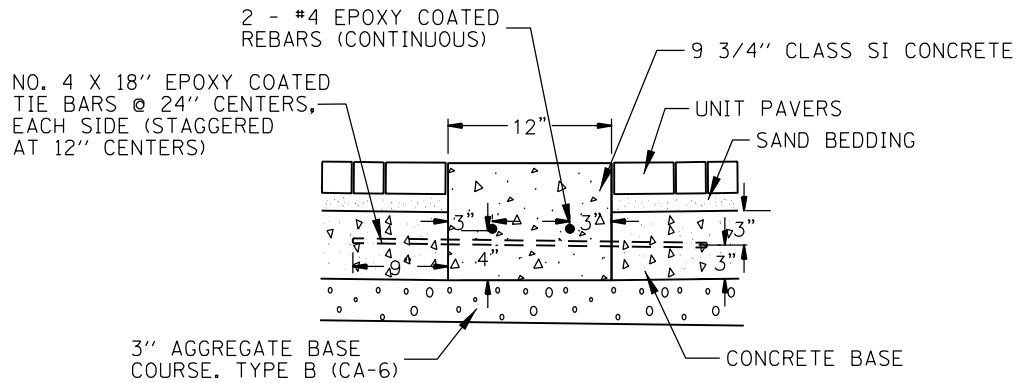
SIEVE SIZE	PERCENT PASSING
3/8 IN	100
NO. 4	95 TO 100
NO. 8	80 TO 100
NO. 16	50 TO 85
NO. 30	25 TO 60
NO. 50	10 TO 30
NO. 100	2 TO 10

UNIT PAVERS OVER RIGID BASE 1 OF 2

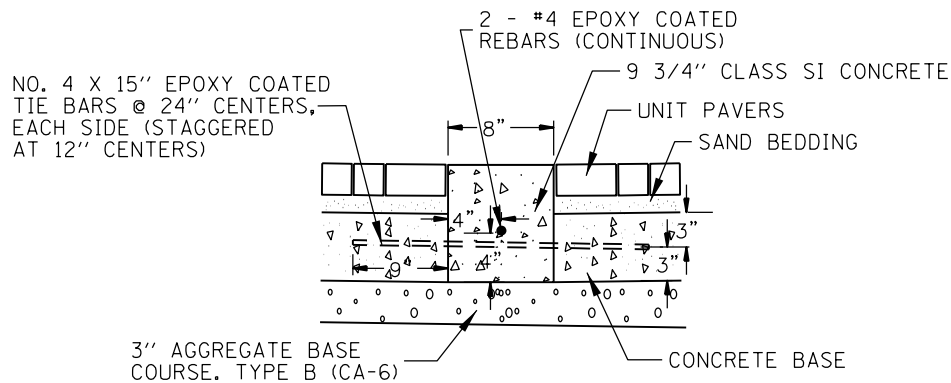
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

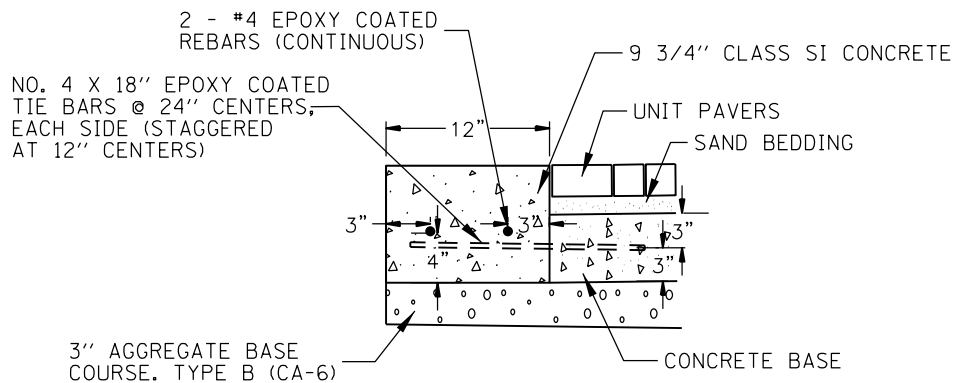
Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



12" CONCRETE STOP BAR



8" CONCRETE CROSSWALK



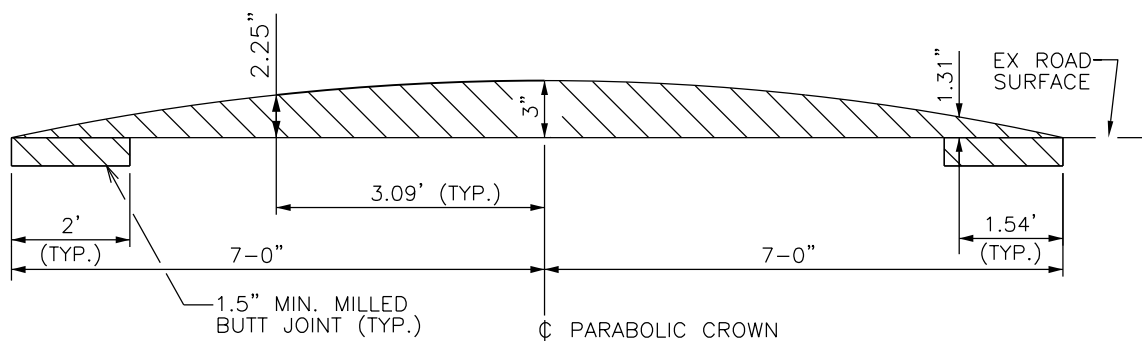
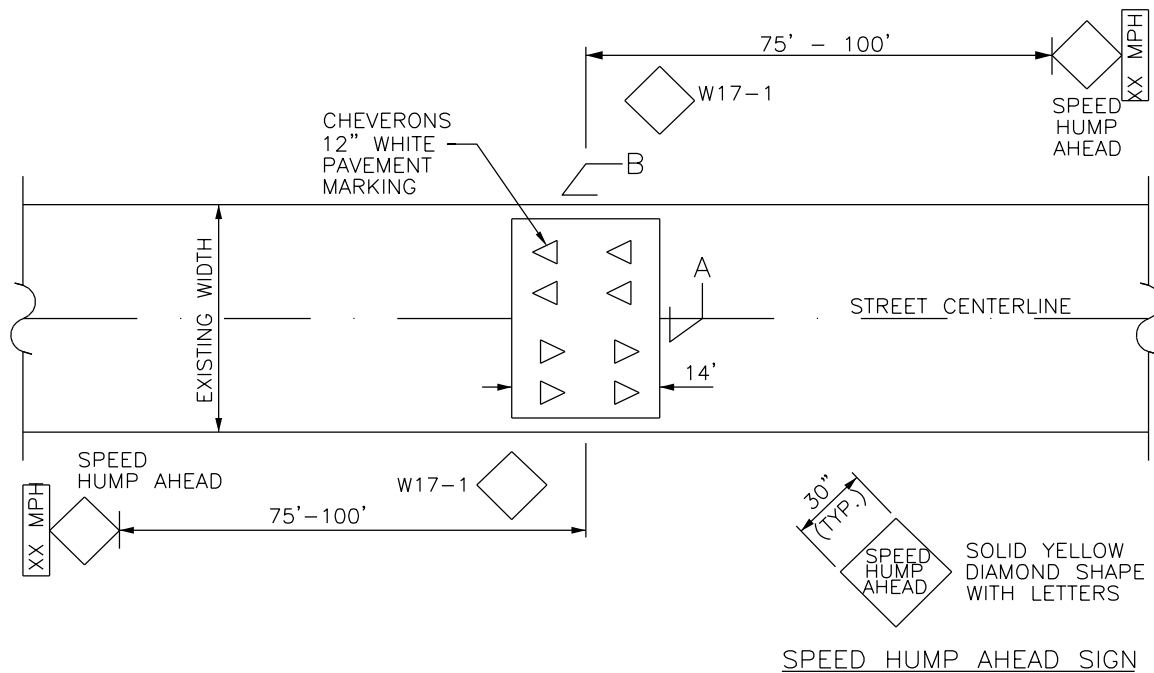
12" CONCRETE BORDER

UNIT PAVERS OVER RIGID BASE 2 OF 2

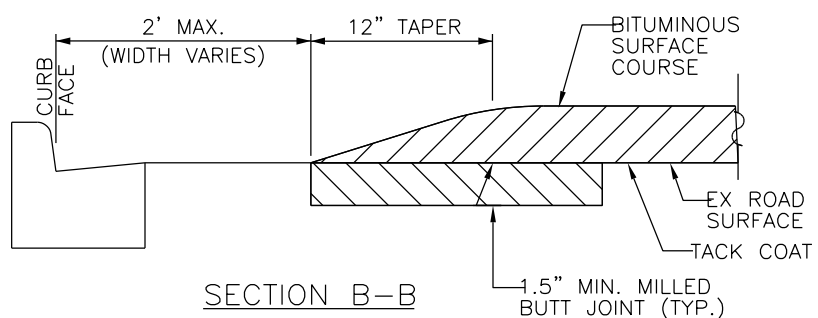
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



SECTION A-A



SECTION B-B

NOTE

- ON NON-CURB ROADS SPEED HUMPS WILL SPAN FROM ROAD EDGE TO ROAD EDGE WITH A MILLED BUTT JOINT ALONG EACH EDGE

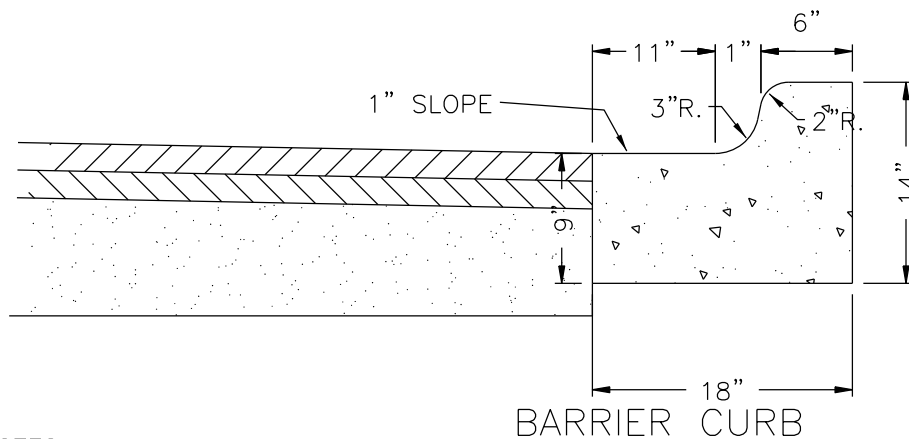
SPECIAL USE ONLY

SPEED HUMP

City of Genoa

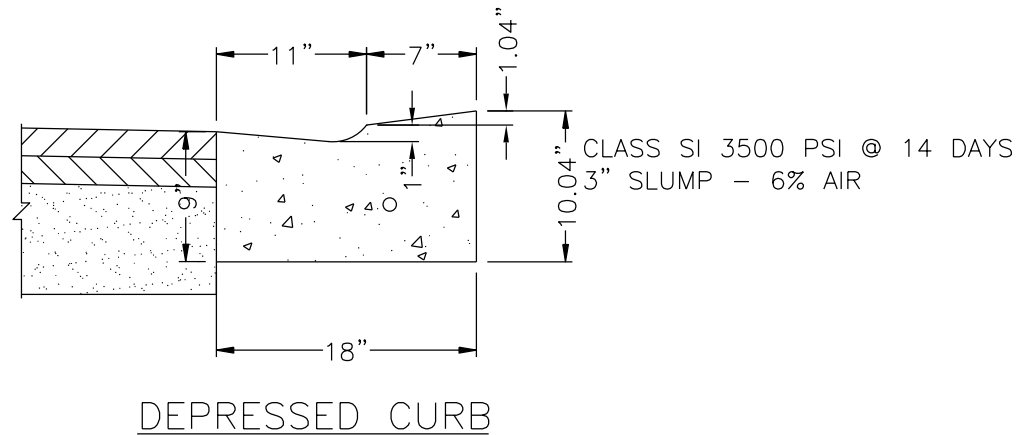
Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

1. EXPANSION JOINTS SHALL BE CONSTRUCTED ACCORDING TO EXPANSION JOINT DETAIL.
2. CONSTRUCTION JOINTS SHALL BE SAWCUT TO A DEPTH OF $\frac{1}{2}$ THICKNESS OF CURB EVERY 10 FEET (MAXIMUM).
3. CONCRETE SHALL BE IDOT CLASS PV 3500 PSI@ 14 DAYS, 3" SLUMP, 6% AIR ENTRAINED.
4. PROTECTIVE COAT SHALL BE APPLIED IN ACCORDANCE WITH IDOT STANDARD SPECIFICATION 420.18 AS DIRECTED BY THE VILLAGE.
5. SEE **CITY OF GENOA** APPROVED PRODUCTS LIST FOR MANUFACTURER AND MODEL NUMBERS.

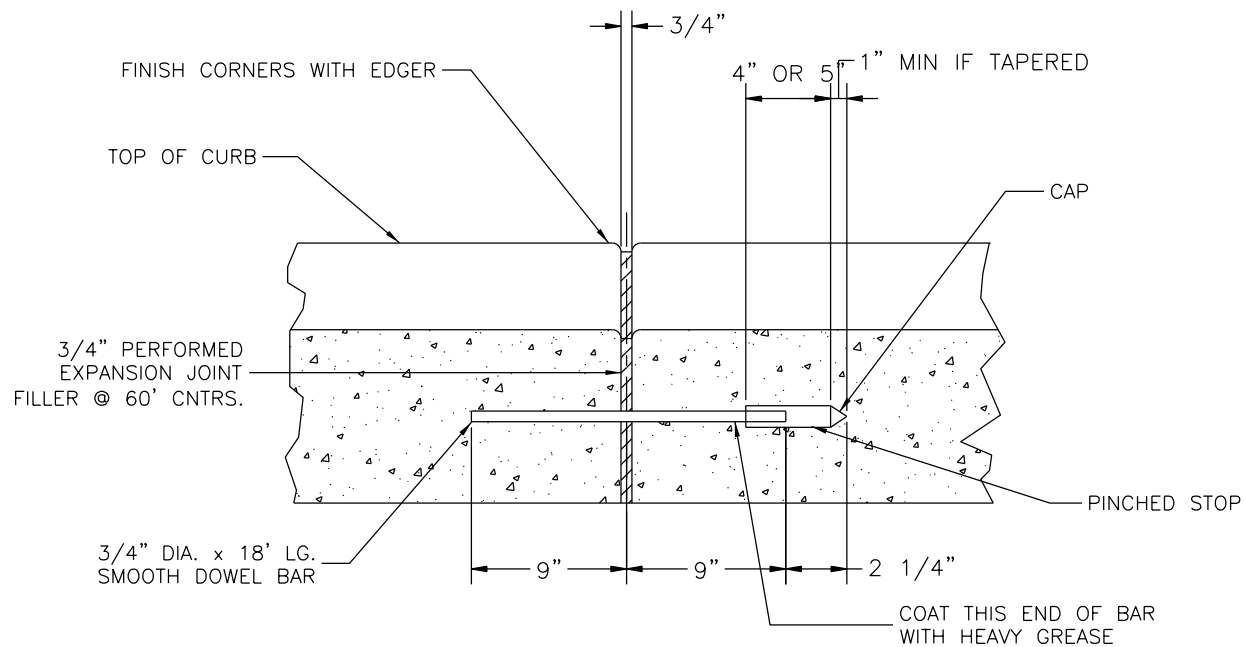


B6.12 CURB & GUTTER

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

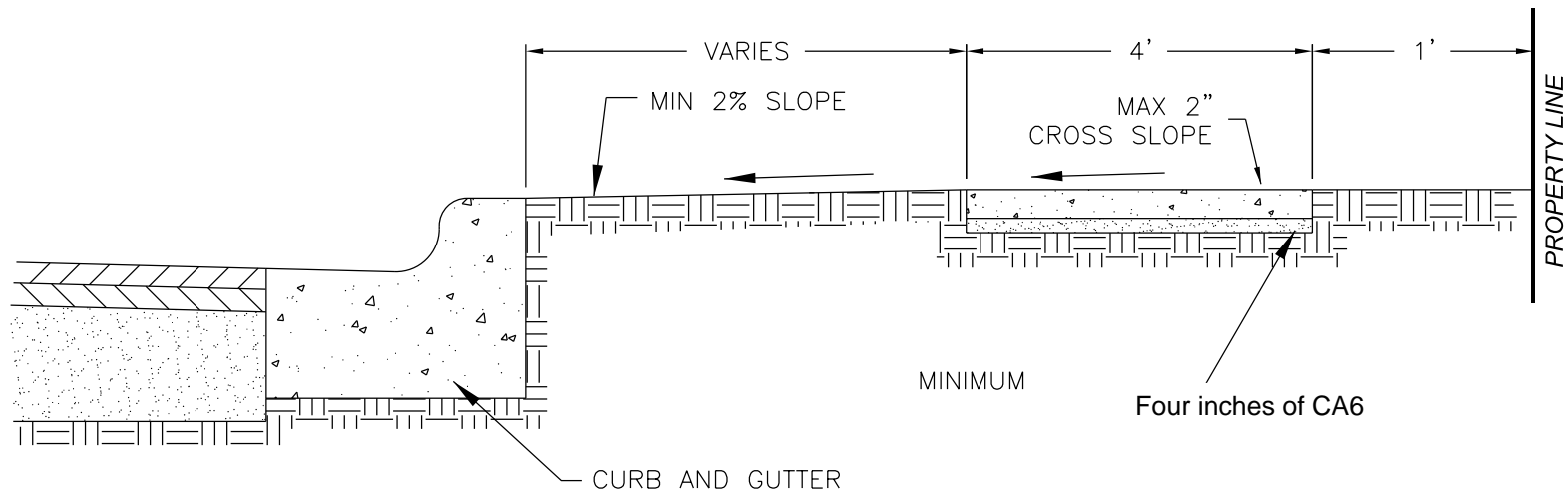
1. ALL EXPANSION JOINTS SHALL BE PROVIDED WITH (2) 3/4" DIA. X 18" LONG COATED SMOOTH DOWEL BAR CONFORMING TO ARTICLE 710.14B OF THE IDOT STANDARD SPECIFICATIONS. THE DOWEL BAR SHALL BE FITTED WITH A CAP HAVING A PINCHED STOP THAT WILL PROVIDE 1" OF EXPANSION.
2. EXPANSION JOINTS SHALL BE CONSTRUCTED AT 60 FOOT INTERVALS, AT ALL POINTS OF TANGENCY, AT THE END OF EACH DAYS PLACEMENT, OR 5' ON EITHER SIDE OF A STRUCTURE CASTING THAT FALLS WITHIN THE CURBLINE.

CURB EXPANSION JOINT

City of Genoa

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100 Madison St.
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NOTES:

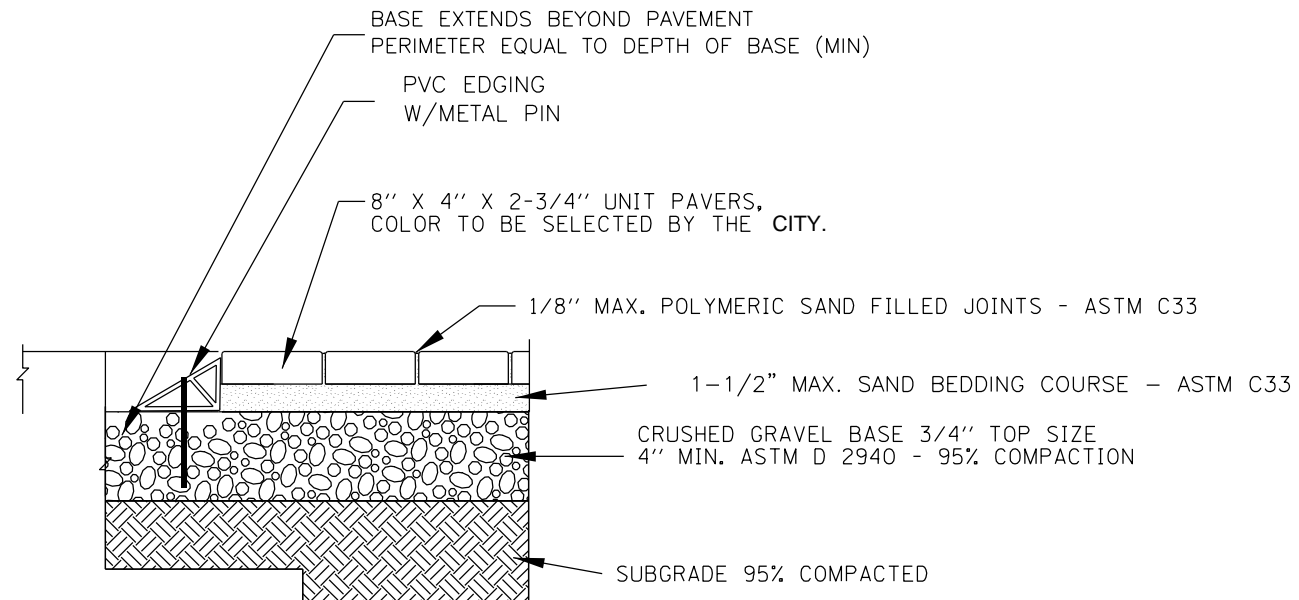
1. THE CONCRETE SIDEWALK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 424 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. THE CONCRETE SHALL CONFORM TO SECTION 1020 CLASS PV AND SHALL HAVE A 3-INCH SLUMP AND SHALL DEVELOP A MINIMUM OF 3,500 PSI COMPRESSIVE STRENGTH AT 14 DAYS.
3. SIDEWALK SHALL BE 4" THICK (MINIMUM).
THE SIDEWALK PORTION OF THE DRIVEWAY SHALL 6" THICK.
4. NO CHLORIDE ADDITIVE WILL BE PERMITTED IN THE CONCRETE.
5. ALL SIDEWALKS MUST CONFORM TO THE AMERICANS WITH DISABILITIES ACT. THE MAXIMUM ALLOWABLE SLOPE IS 1:20.
6. TOOLED CONTROL JOINTS SHALL BE INSTALLED ON 5' CENTERS.
7. FIBER EXPANSION JOINTS SHALL BE INSTALLED AT 50' CENTERS MAX AND WHERE THE SIDEWALK ABUTTS CURB OR EXISTING SIDEWALK, AND AT THE END OF EACH POUR.
8. THE SIDEWALK SHALL HAVE A BROOM FINISH.

SIDEWALK

City of Genoa

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Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

1. GRADING **REQUIREMENTS** FOR BEDDING AND JOINT SAND

<u>SIEVE SIZE</u>	<u>PERCENT PASSING</u>
3/8 IN	100
NO. 4	95 TO 100
NO. 8	80 TO 100
NO. 16	50 TO 85
NO. 30	25 TO 60
NO. 50	10 TO 30
NO. 100	2 TO 10

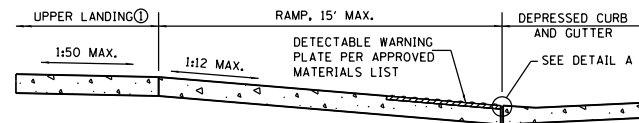
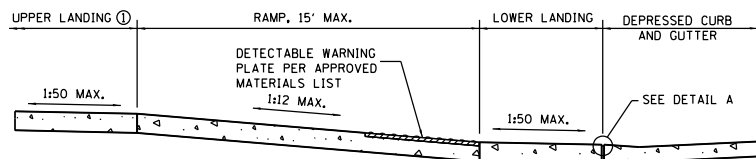
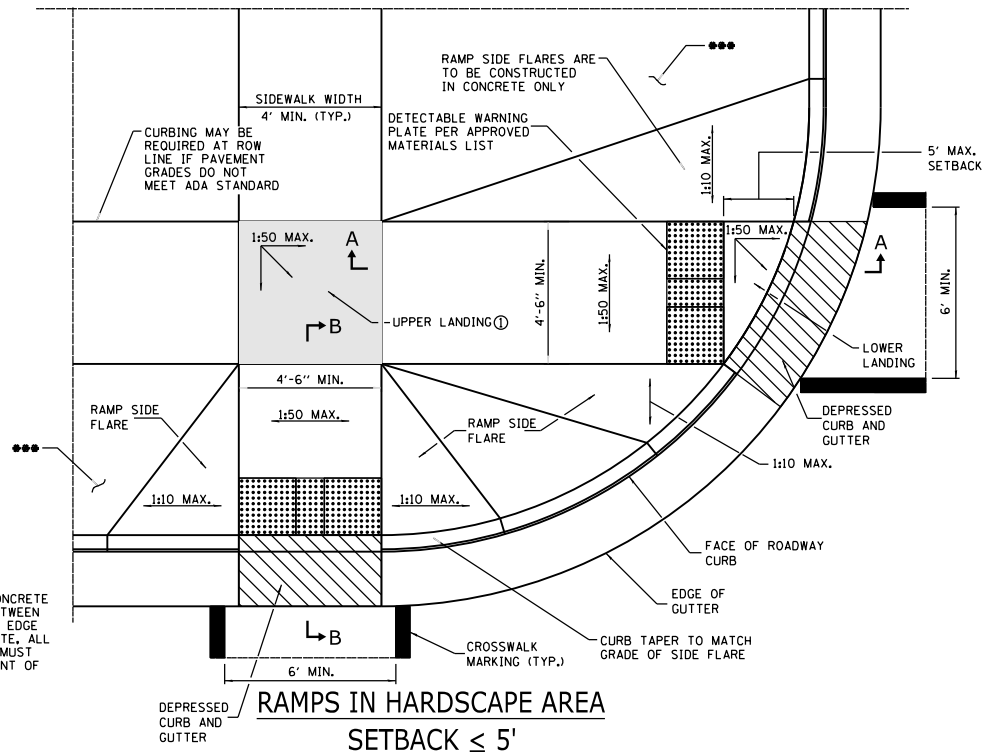
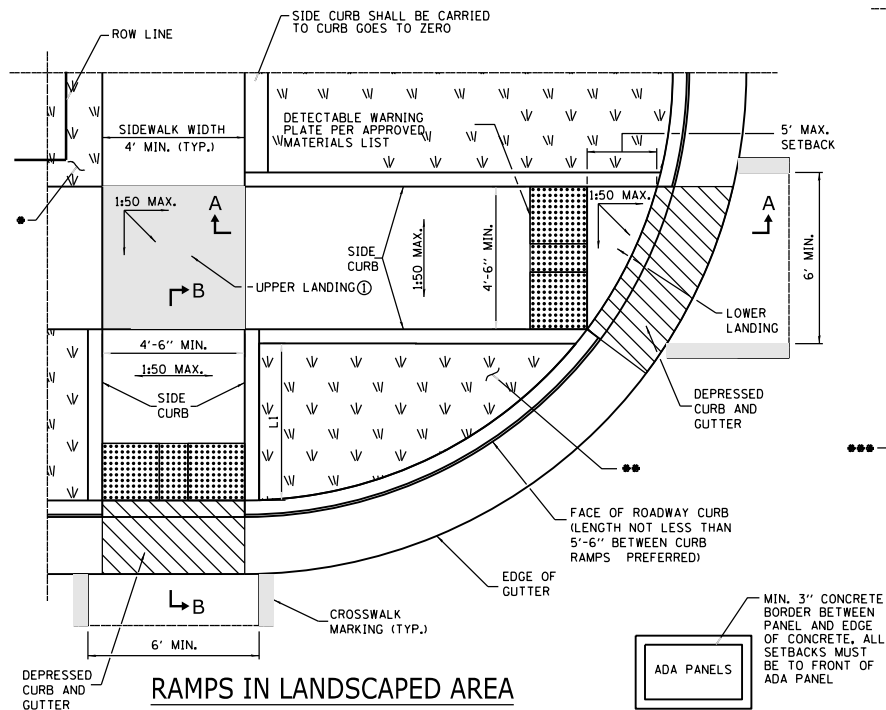
2. SEE **COG** APPROVED PRODUCTS LIST
FOR MFG & MODEL #S

UNIT PAVERS SIDEWALK/PLAZA

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
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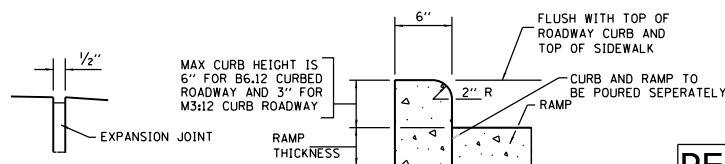
- IF GRADING EXCEEDS 3:1 FROM WALK TO ROW THEN INSTALL BACK OF WALK SIDE CURB, IF GRADE FROM TOP OF BACK OF WALK CURB TO ROW EXCEEDS 3:1 THEN A TEMPORARY EASEMENT IS REQUIRED FOR GRADING.
- TRAPPED MATERIAL MUST BE:

TOPSOIL & SEED			BRICK PAVER		
L1 LENGTH	B6:12	M3:12	B6:12	M3:12	
3 FT OR LESS			X		X
3 - 6 FEET		X	X		
6 - 9+ FEET	X	X			

 MUST HAVE MOWER ACCESS (3' WIDE UNCURRED AREA FROM SIDEWALK TO TRAPPED MATERIAL) IN ALL CASES IN ORDER FOR TOPSOIL & SEED TO BE INSTALLED, OTHERWISE BRICK PAVERS ARE REQUIRED.
- WHEN ADJACENT HARDSCAPE IS BRICK PAVER, RAMP AND SIDE FLARE TO BE CONSTRUCTED IN CONCRETE.

SECTION A-A

① UPPER LANDING NOT REQUIRED FOR RAMP SLOPES FLATTER THAN 1:20.



SIDE CURB DETAIL

NOTES

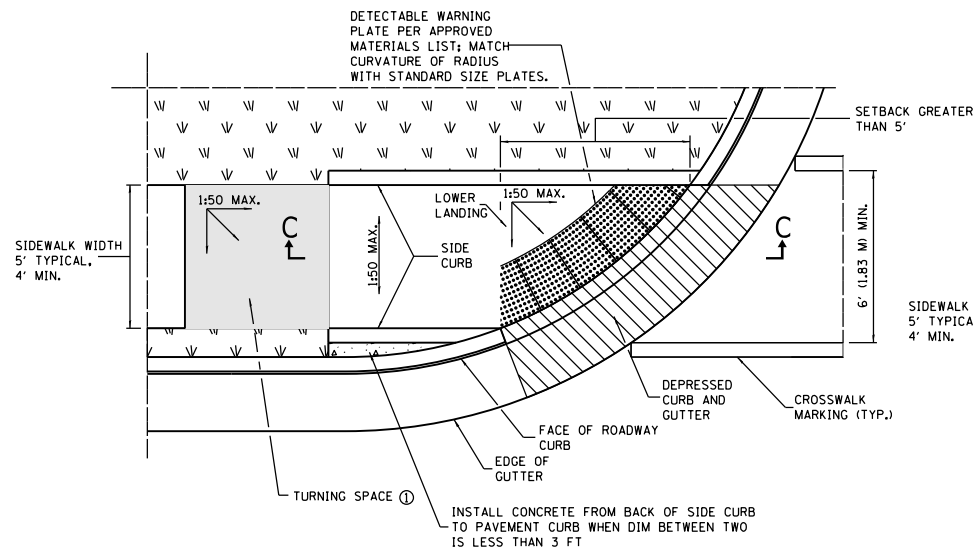
1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
2. WHERE 1:50 MAXIMUM SLOPE IS SHOWN, 1:64 IS PREFERRED.
3. SEE COG APPROVED PRODUCTS LISTS.

PERP. CURB RAMPS FOR SIDEWALKS 1 OF 2

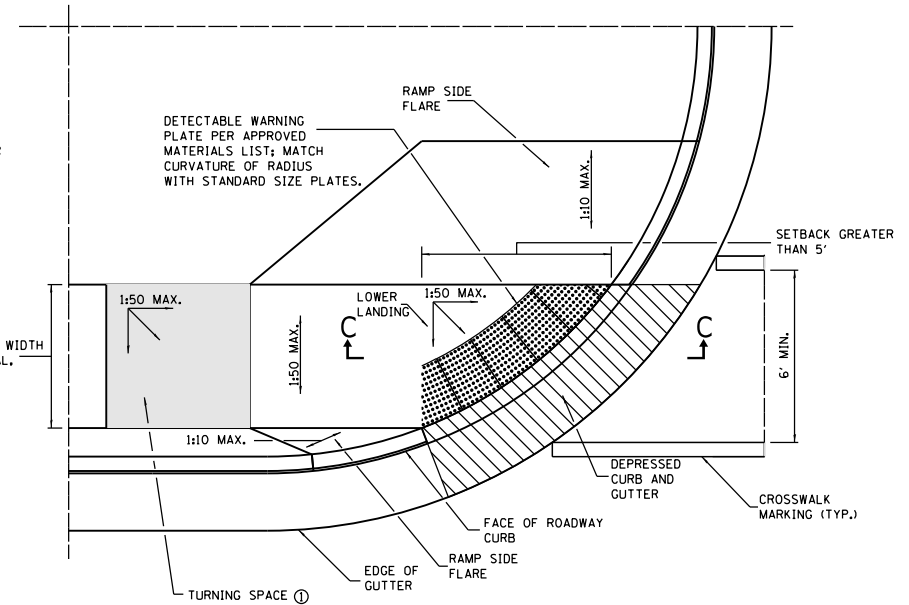
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

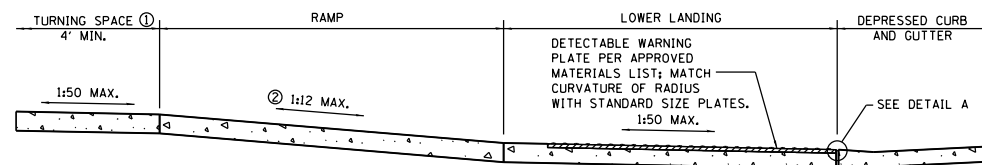
Tel. 815-784-2327
Fax 815-784-4271
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RAMP IN LANDSCAPED AREA
SETBACK > 5'



RAMP IN PAVED AREA ***
SETBACK > 5'



SECTION C-C

- ① TURNING SPACE NOT REQUIRED FOR RAMP SLOPES FLATTER THAN 1:20.
- ② THE RUNNING SLOPE OF THE CURB RAMP SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15'.

GENERAL NOTES

1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
2. WHERE THE TURNING SPACE IS CONSTRAINED ON A SIDE OPPOSITE A RAMP, THE MINIMUM LENGTH OF THE TURNING SPACE IN THE DIRECTION OF THE RAMP-RUN SHALL BE 5'.
3. WHERE 1:50 MAXIMUM SLOPE IS SHOWN, 1:64 IS PREFERRED.
4. See approved products list.

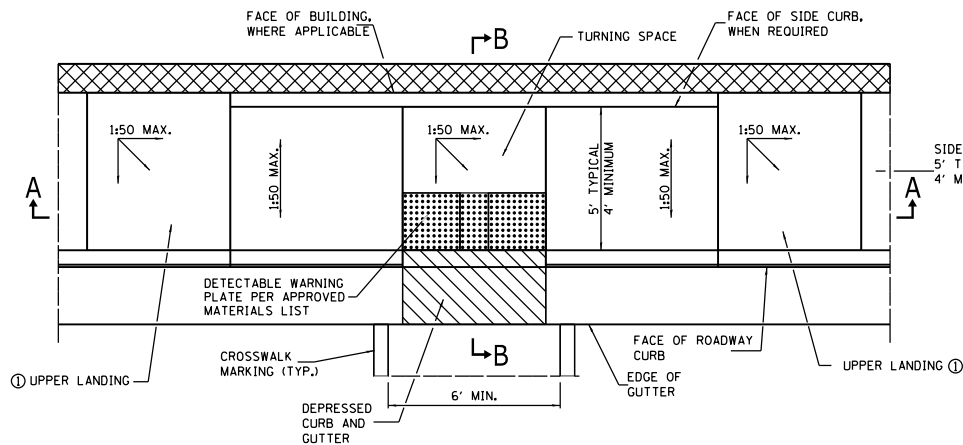
*** WHEN ADJACENT HARDSCAPE IS BRICK PAVEMENT, RAMP AND SIDE FLARE TO BE CONSTRUCTED IN CONCRETE.

PERP. CURB RAMPS FOR SIDEWALKS 2 OF 2

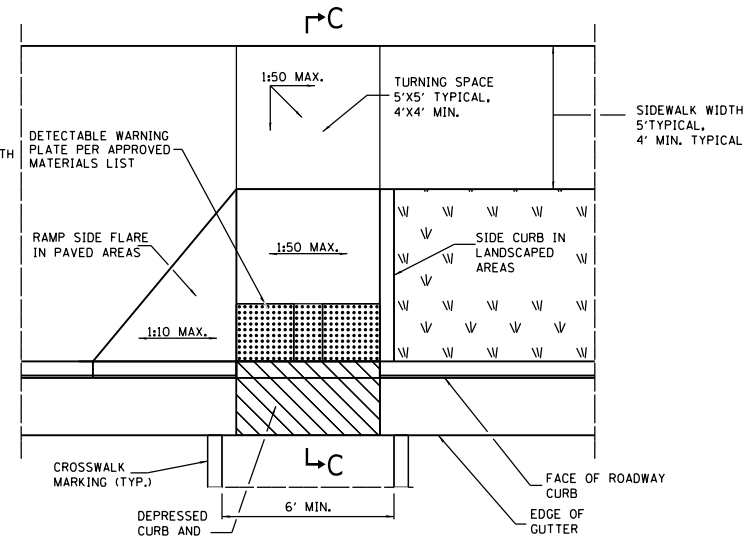
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

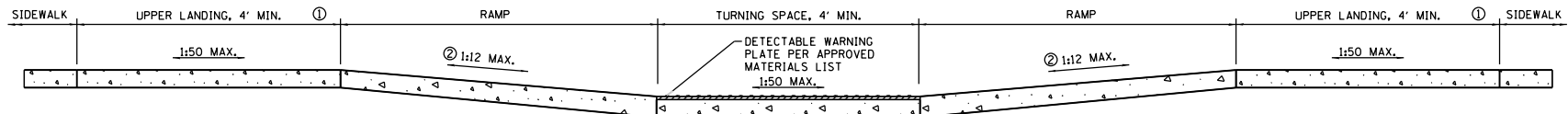
Tel. 815-784-2327
Fax 815-784-4271
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PARALLEL MID-BLOCK CURB RAMP

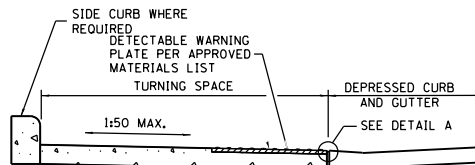


PERPENDICULAR MID-BLOCK CURB RAMP

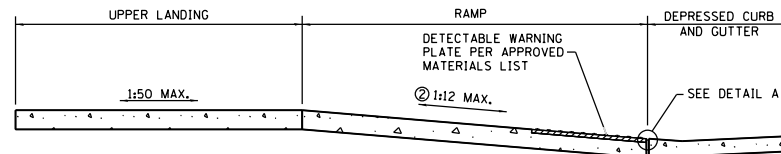


SECTION A-A

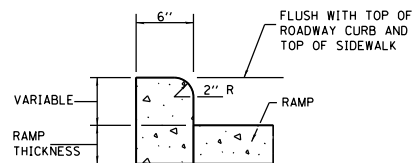
- ① UPPER LANDING(S) NOT REQUIRED FOR RAMP SLOPES FLATTER THAN 1:20.
- ② THE RUNNING SLOPE OF THE CURB RAMP SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15'.



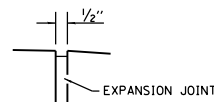
SECTION B-B



SECTION C-C



SIDE CURB DETAIL



DETAIL A

NOTES

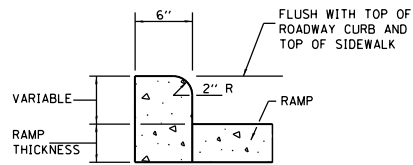
1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
2. WHERE THE TURNING SPACE IS CONSTRAINED ON A SIDE OPPOSITE A RAMP, THE MINIMUM LENGTH OF THE TURNING SPACE IN THE DIRECTION OF THE RAMP-RUN SHALL BE 5'.
3. WHERE 1:50 MAXIMUM SLOPE IS SHOWN, 1:64 IS PREFERRED.
4. SEE COG APPROVED PRODUCTS LIST.

MID-BLOCK CURB RAMPS FOR SIDEWALKS

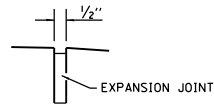
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

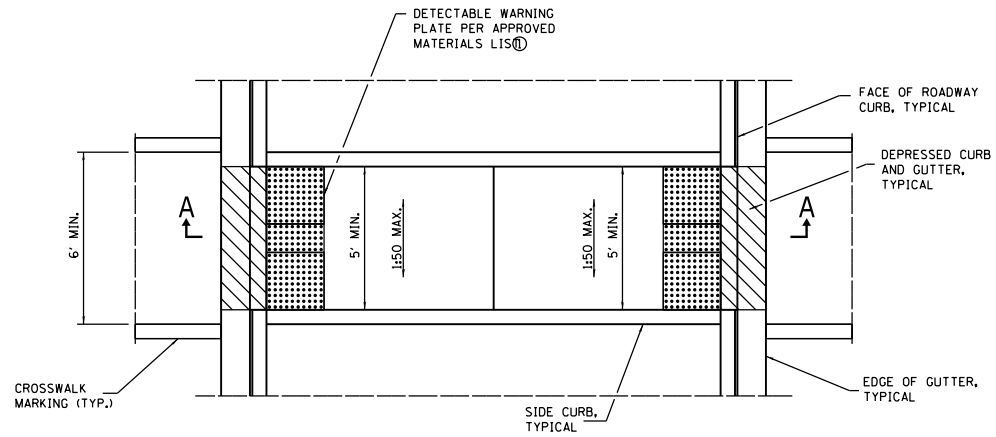
Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



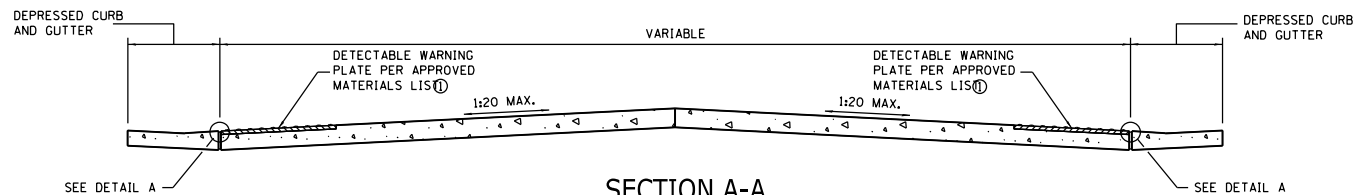
SIDE CURB DETAIL



DETAIL A



MEDIAN PEDESTRIAN CROSSING



SECTION A-A

① OMIT DETECTABLE WARNINGS WHEN DISTANCE BETWEEN BACK OF CURBS IS LESS THAN 6'.

NOTES

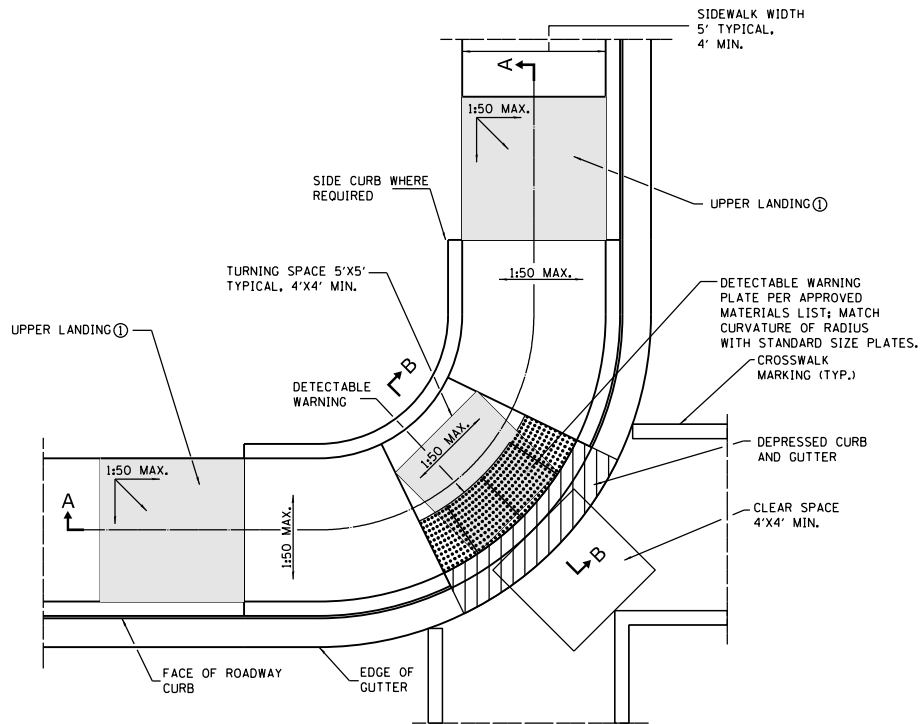
1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
2. WHERE 1:50 MAXIMUM SLOPE IS SHOWN, 1:64 IS PREFERRED.
3. SEE APPROVED COG PRODUCTS LIST FOR MFG& #S

MEDIAN PEDESTRIAN CROSSING

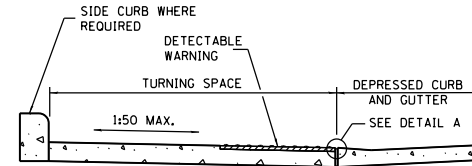
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

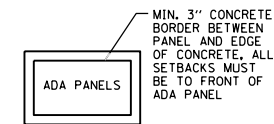
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Fax 815-784-4271
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CORNER PARALLEL CURB RAMP

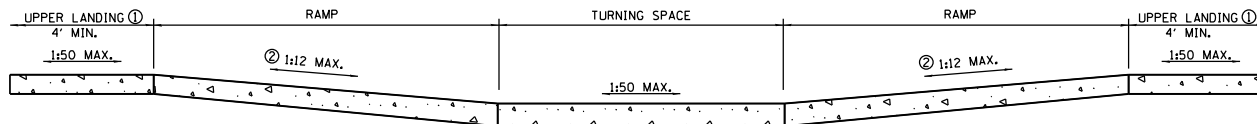


SECTION B-B



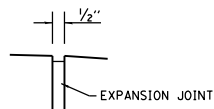
NOTES

1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
2. WHERE THE TURNING SPACE IS CONSTRAINED ON A SIDE OPPOSITE A RAMP, THE MINIMUM LENGTH OF THE TURNING SPACE IN THE DIRECTION OF THE RAMP-RUN SHALL BE 5'.
3. WHERE 1:50 MAXIMUM SLOPE IS SHOWN, 1:64 IS PREFERRED.
4. SEE APPROVED COG PRODUCTS LIST FOR MFG & MODEL #;S

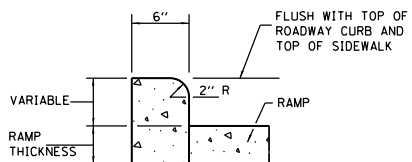


SECTION A-A

- ① UPPER LANDING(S) NOT REQUIRED FOR RAMP SLOPES FLATTER THAN 1:20.
- ② THE RUNNING SLOPE OF THE CURB RAMP SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15'.



DETAIL A



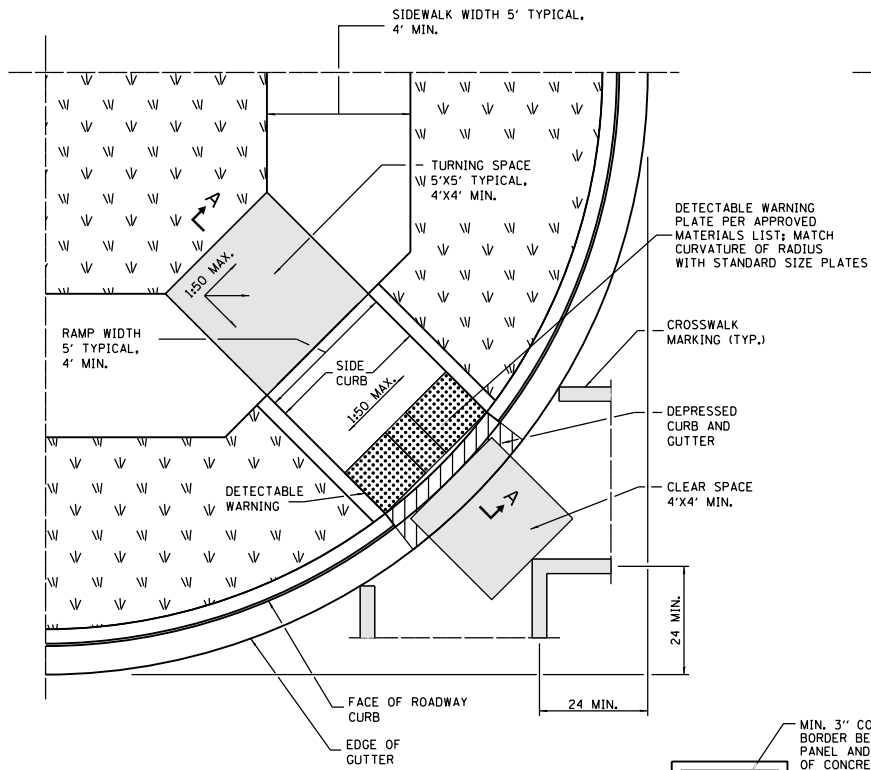
SIDE CURB DETAIL

CORNER PARALLEL CURB RAMPS FOR SIDEWALKS

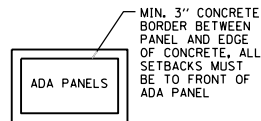
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

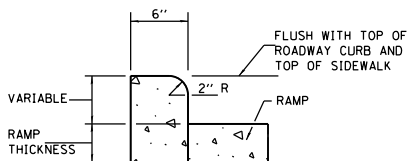
Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



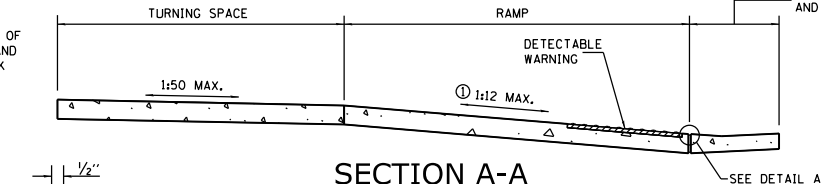
RAMP IN LANDSCAPED AREA



ADA PANELS

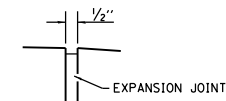


SIDE CURB DETAIL

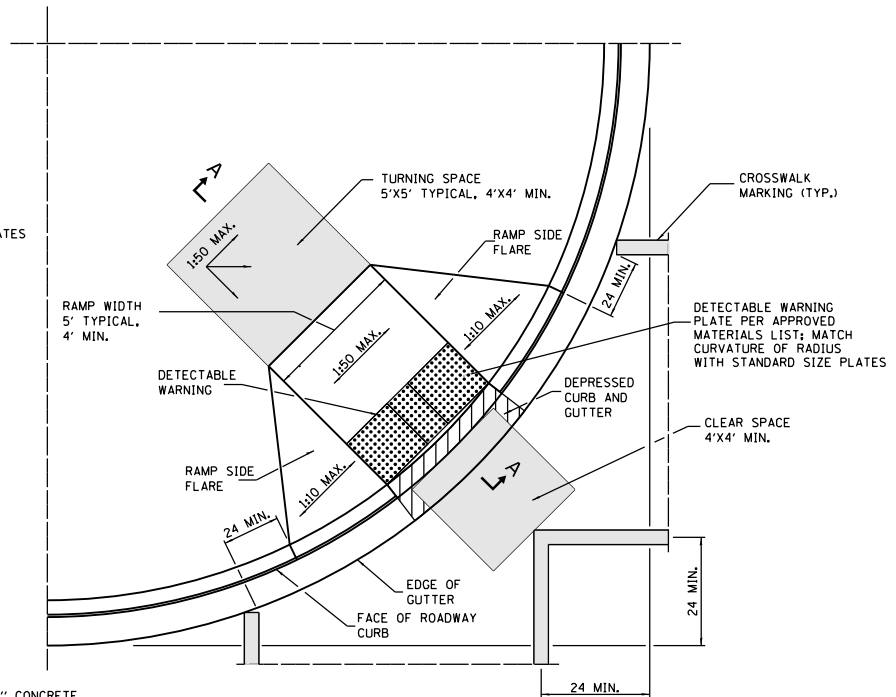


SECTION A-A

① THE RUNNING SLOPE OF THE CURB RAMP SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15'.



DETAIL A



RAMP IN PAVED AREA

NOTES

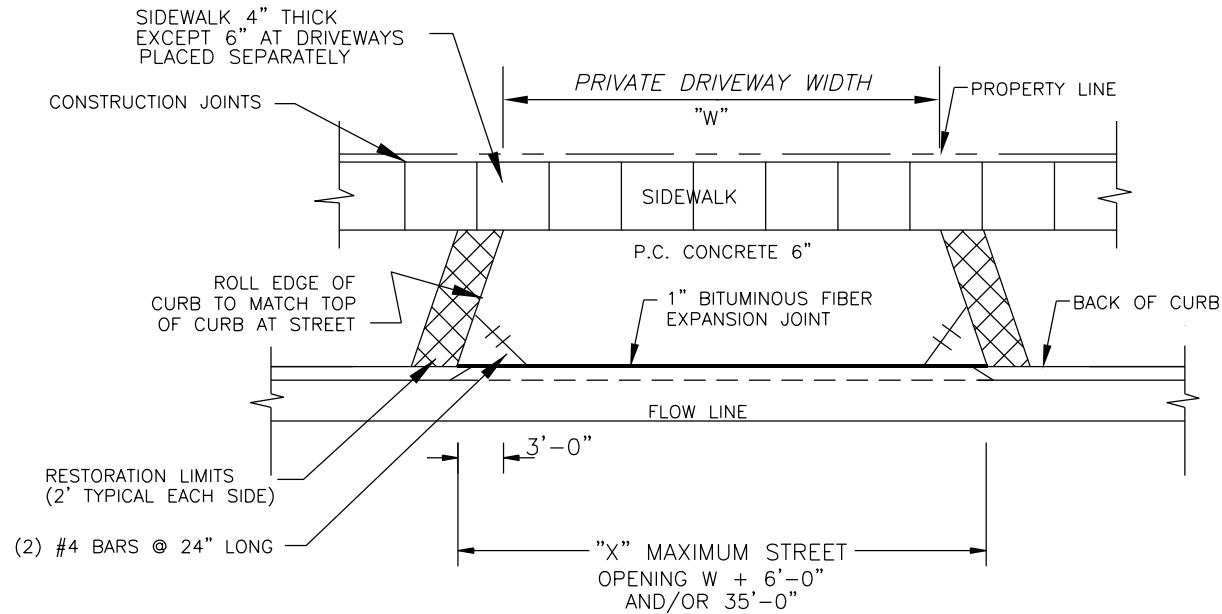
1. THIS STANDARD SHALL ONLY BE USED FOR CURB RADII OF 20 FT. OR GREATER.
2. WHERE THE TURNING SPACE IS CONSTRAINED ON A SIDE OPPOSITE A RAMP, THE MINIMUM LENGTH OF THE TURNING SPACE IN THE DIRECTION OF THE RAMP-RUN SHALL BE 5'.
3. WHERE 1:50 MAXIMUM SLOPE IS SHOWN, 1:64 IS PREFERRED.
4. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
5. SEE APPROVED COG PRODUCTS LIST FOR MFG AND MODEL NUMBERS.

DIAG. CURB RAMPS FOR SIDEWALKS

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



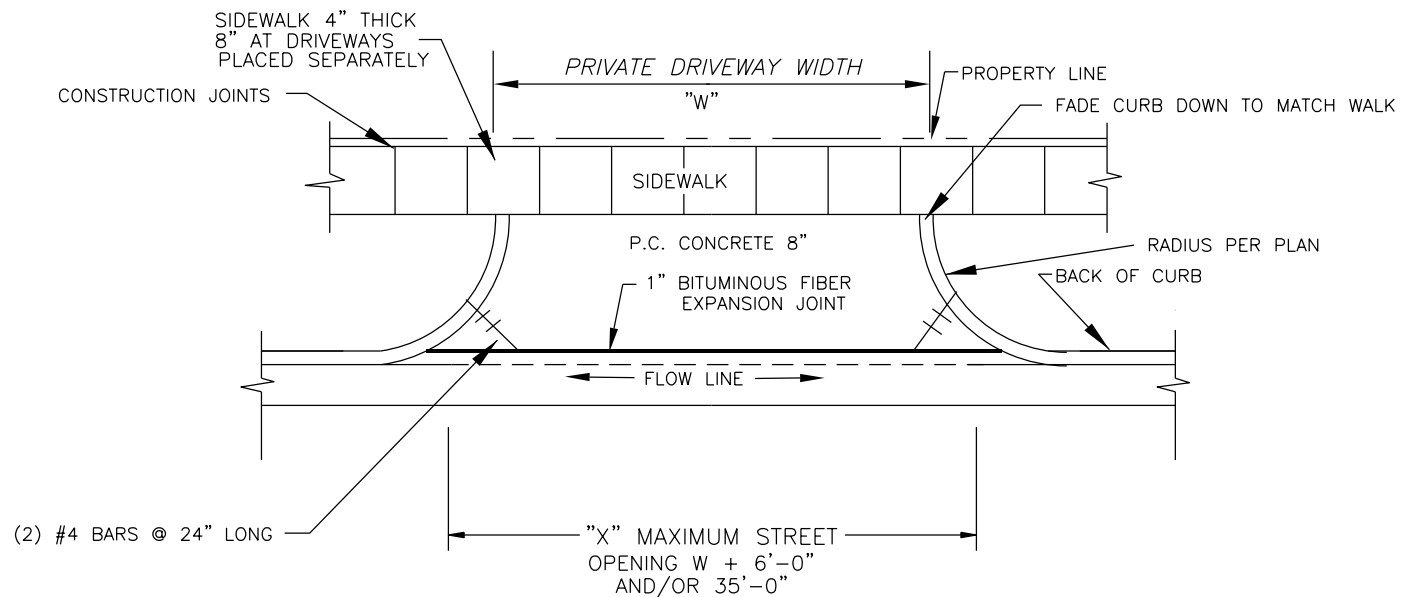
1. CONSTRUCTION JOINTS SHALL BE PLACED IN A UNIFORM MANNER THAT ALLOWS NO SINGLE SLAB TO BE MORE THAN A 10 FOOT BY 10 FOOT SECTION.
2. WHERE PROPOSED ENTRANCE IS FRONTED BY BARRIER CURB OR THERE IS A DESIRE TO CHANGE ANY PORTION OF THE EXISTING CURB AND GUTTER CROSS SECTION, SAID CURB AND GUTTER SHALL BE SAW CUT; TRANSITION FROM FULL TO DEPRESSED CURB SHALL BE ACCOMPLISHED IN A MINIMUM OF 1 LINEAR FOOT.
3. A MINIMUM OF 4" OF CA 6 TYPE B MUST BE PLACED AND COMPACTED PRIOR TO ANY CONCRETE POURING. THIS BASE MUST ALSO BE APPROVED BY THE FIELD ENGINEER OR INSPECTOR OF THE **CITY OF GENOA**.
4. ANY DEVIATION FROM THE ABOVE DETAILED OR SPECIFIED SHALL BE ONLY WITH WRITTEN APPROVAL OF THE PUBLIC WORKS DIRECTOR
5. APRON IS TO BE PLACED SEPARATELY FROM SIDEWALK & CURB

RESIDENTIAL APRON

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



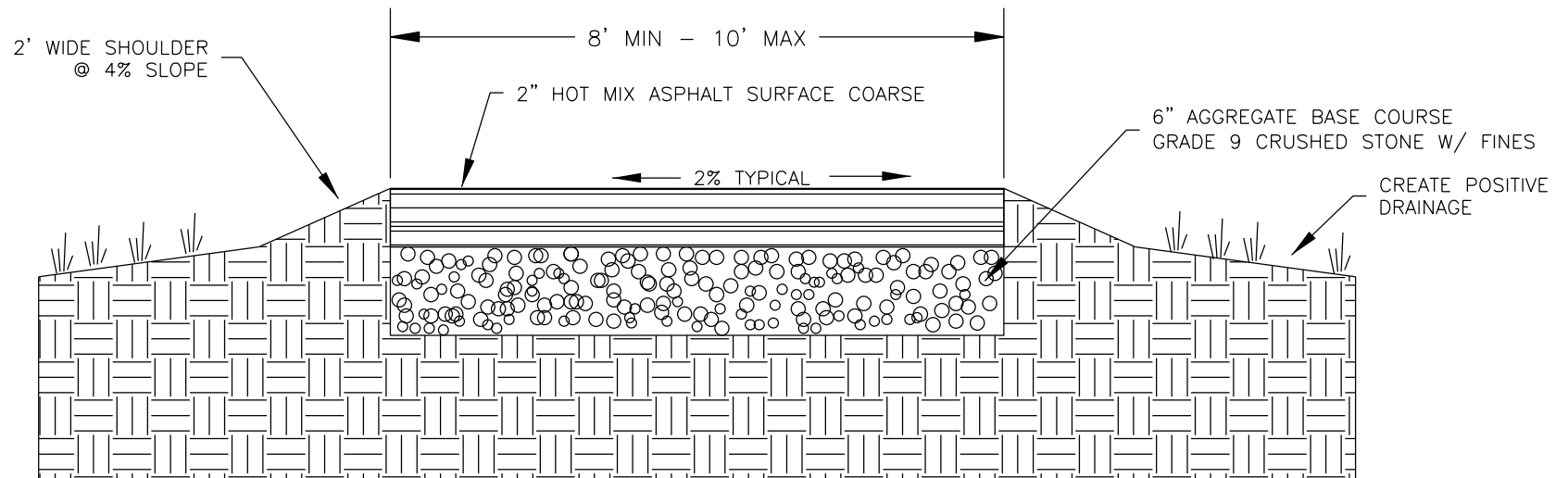
1. PORTLAND CEMENT CONCRETE SHALL CONFORM TO IDOT CLASS PV, 3500 PSI @ 14 DAYS, SLUMP 3", AND 6% AIR ENTRAINMENT.
2. CONSTRUCTION JOINTS SHALL BE PLACED IN A UNIFORM MANNER THAT ALLOWS NO SINGLE SLAB TO BE MORE THAN A 10' X 10' SECTION.
3. WHERE THE PROPOSED ENTRANCE IS FRONTED BY BARRIER CURB OR THERE IS A DESIRE TO CHANGE A PORTION OF THE EXISTING CURB AND GUTTER CROSS SECTION, THE HEAD OF THE CURB SHALL BE REMOVED BY SAWCUT. TRANSITION FROM FULL TO DEPRESSED CURB SHALL BE ACCOMPLISHED IN A MINIMUM OF ONE LINEAL FOOT.
4. A MINIMUM OF FOUR (4) INCHES OF CA-6, TYPE B MUST BE PLACED AND COMPACTED PRIOR TO CONCRETE PLACEMENT.

COMMERCIAL / INDUSTRIAL APRON

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

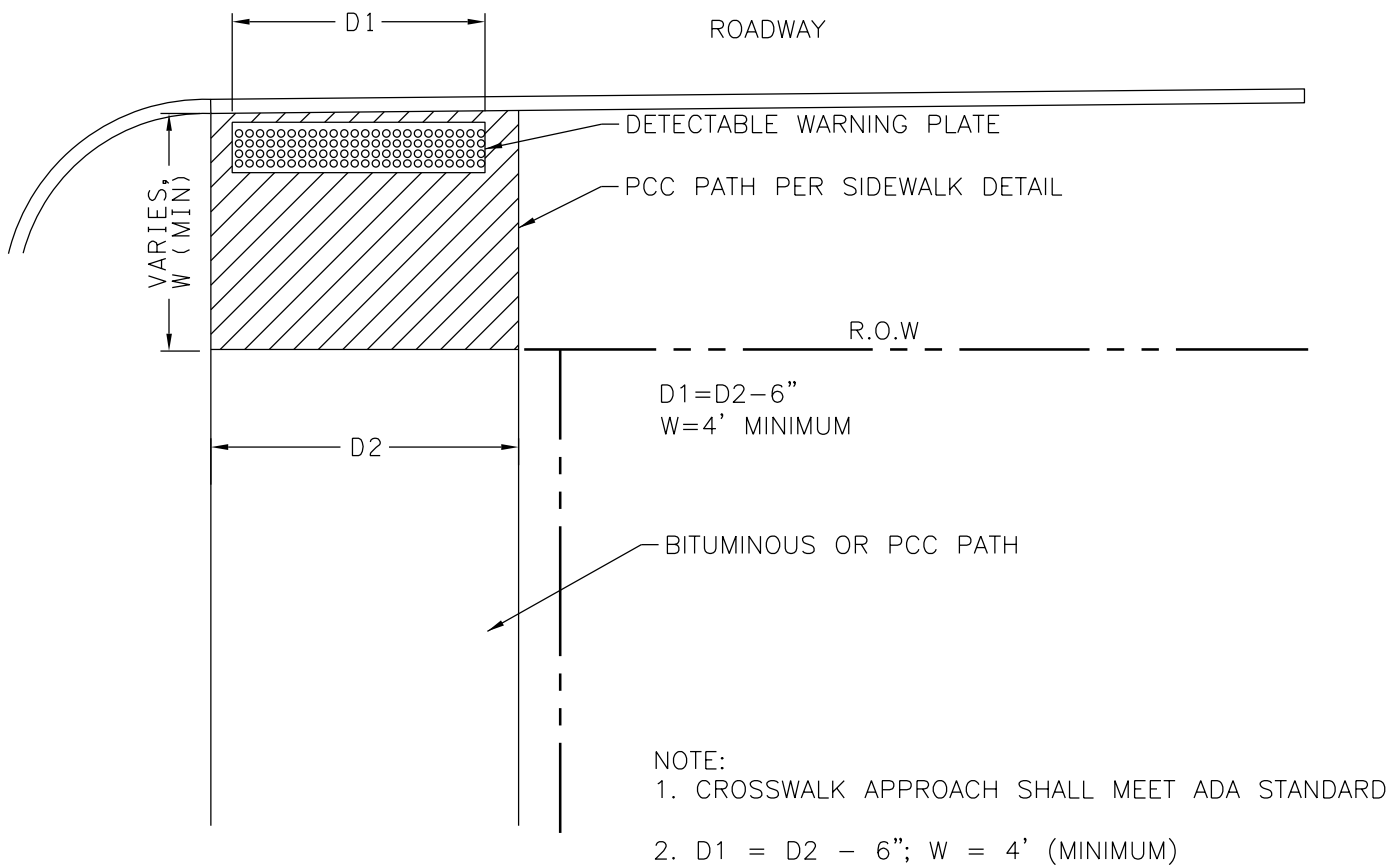


BITUMINOUS MULTI USE PATH

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

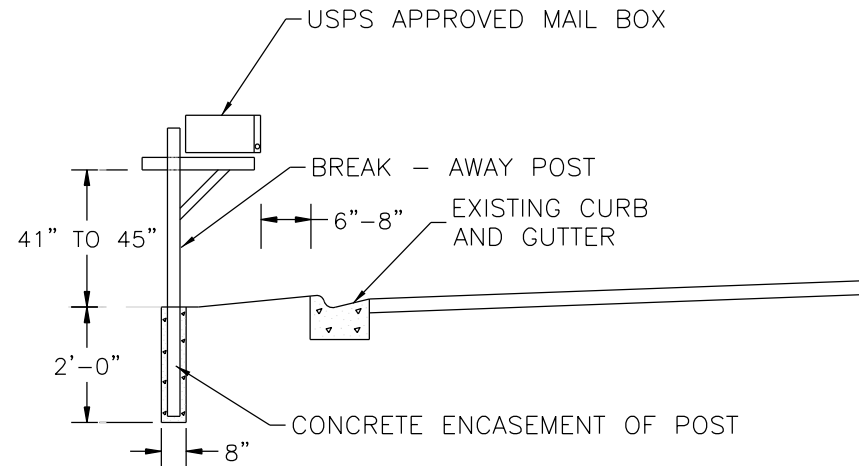


MULTI USE PATH ROADWAY CROSSING

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

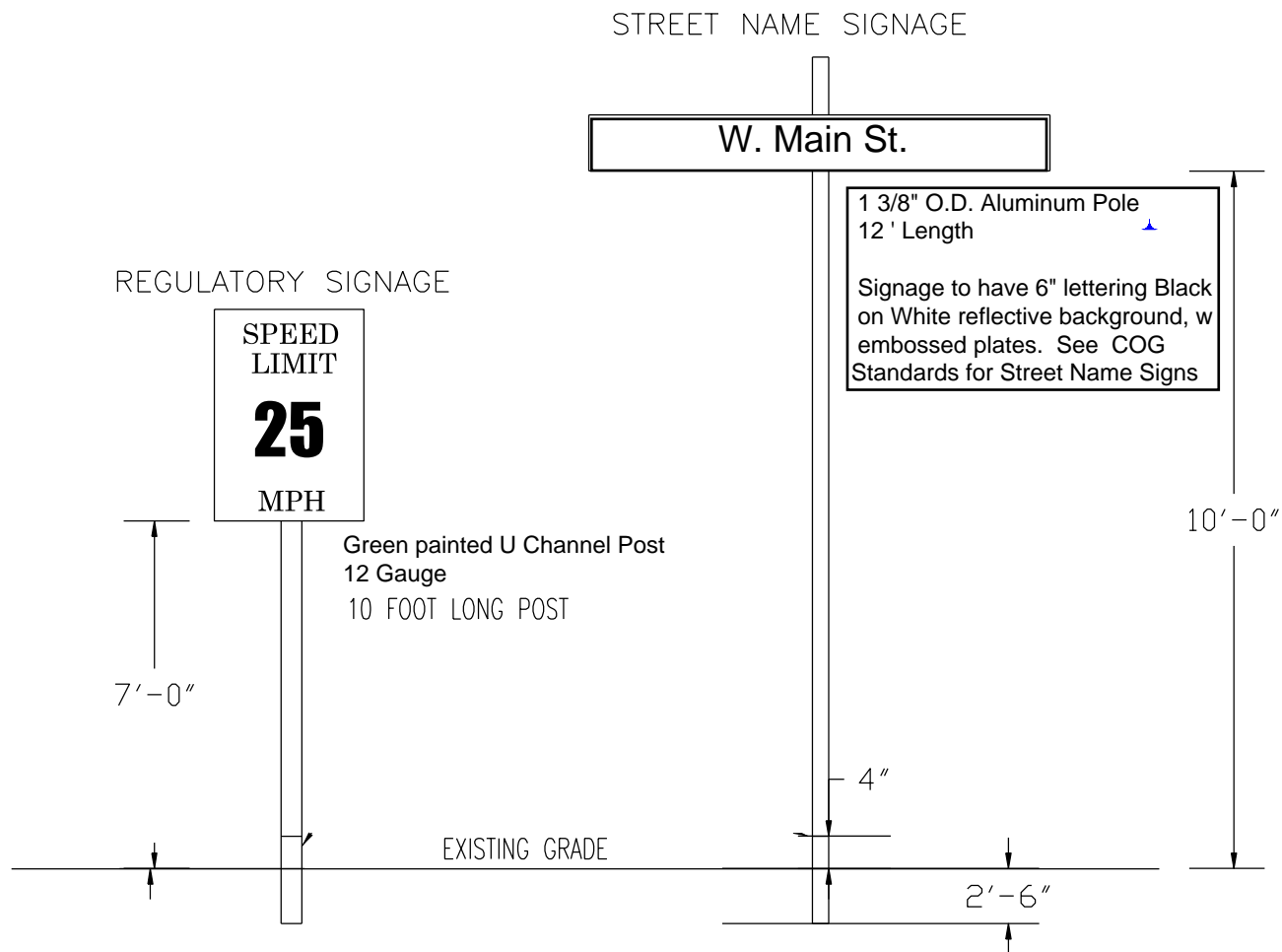
1. ADDRESS NUMBER SHALL BE CLEARLY LABELED ON MAIL BOX DOOR.
2. ALL MAILBOX POSTS AND HORIZONTAL SUPPORT ARMS SHALL BE MADE OF 4"X4" CHEMICALLY TREATED LUMBER. POSTS AND SUPPORT ARMS SHALL BE ATTACHED USING GALVANIZED SCREWS.
3. MAILBOX POSTS SHALL NOT BE REINFORCED OR FORTIFIED SO AS TO PREVENT OR HAMPER ITS DESTRUCTION UPON BEING STRUCK BY THE VEHICLE.
4. NO MASONRY OR STONE MAILBOX ENCLOSURE ARE ALLOWED.

DOMESTIC MAIL BOX

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

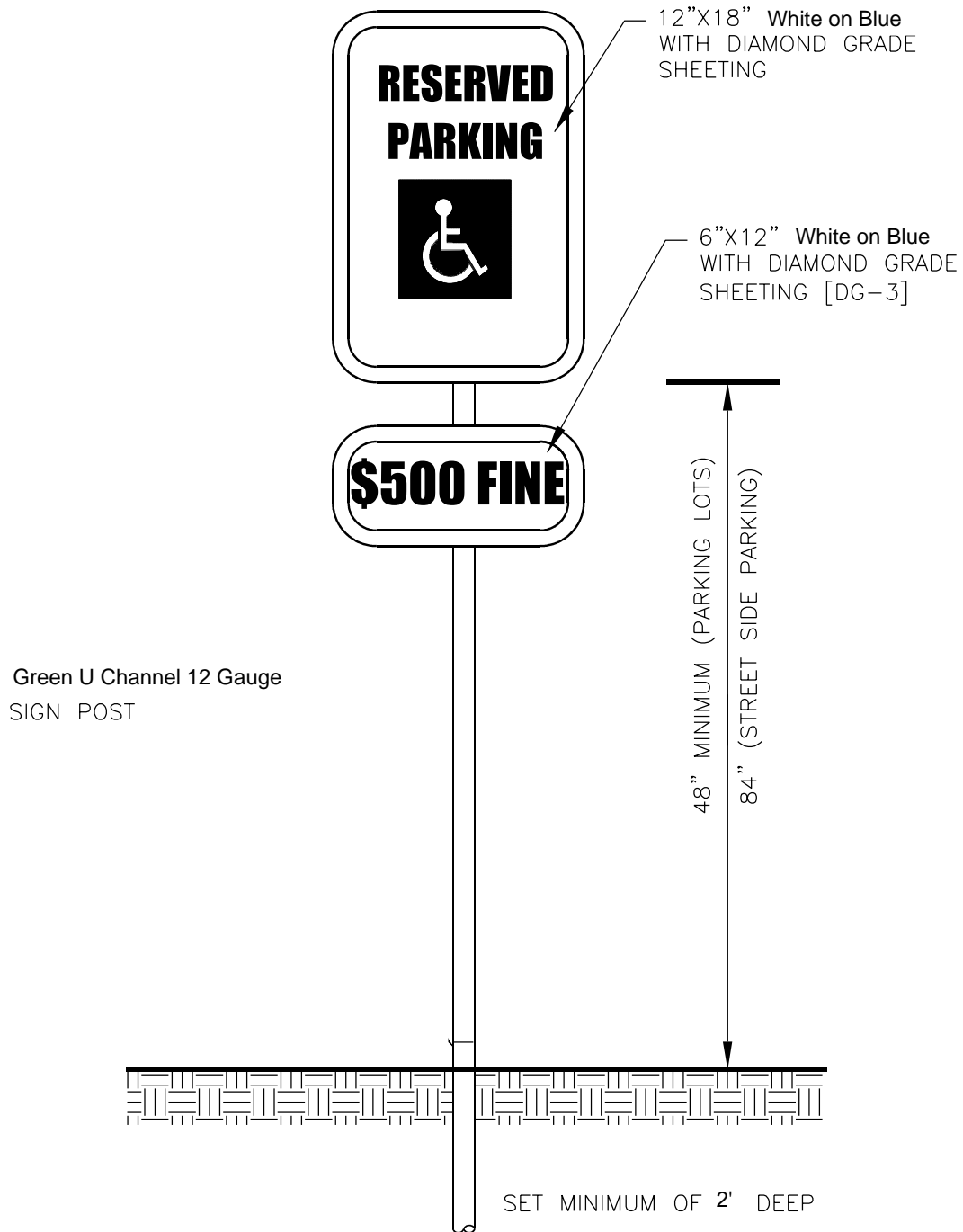
1. ALL SIGNAGE IS TO BE PLACE 3 (THREE) FEET BEHIND BACK OF CURB OR EDGE OF SHOULDER
2. ALL SIGNS ARE TO BE FACED CORRECTLY
3. ALL SIGNS SHALL BE CLEAN AND READABLE
4. ALL EXISTING SIGNAGE SHALL BE INSTALLED IN SOME FASHION AT THE END OF EACH WORKING DAY
5. ALL SIGNS SHALL MEET THE M.U.T.C.D. CODE
6. ALL SIGNS ARE TO BE MADE OF DIAMOND GRADE REFLECTIVE SHEETING

STREET SIGNAGE

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

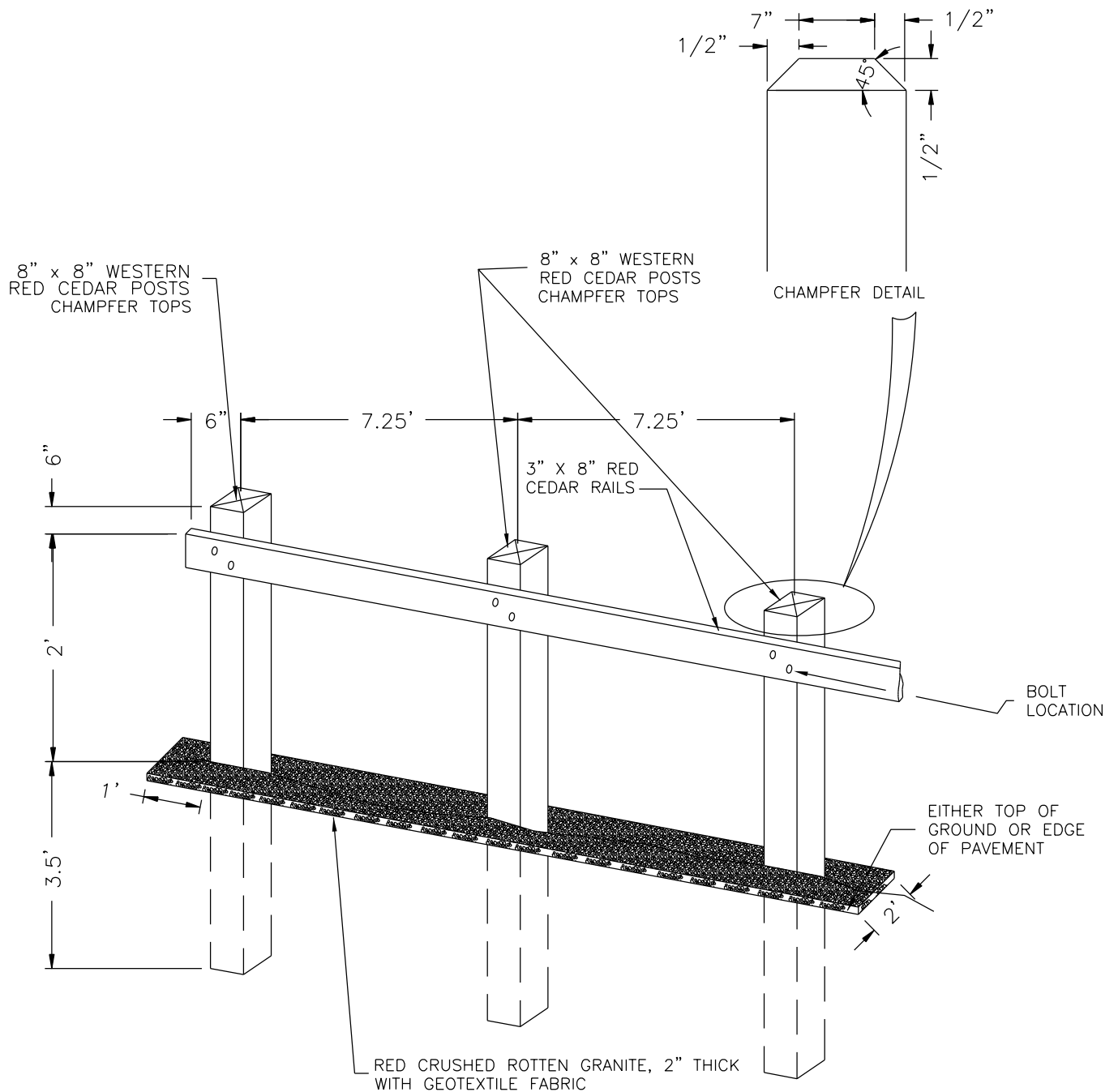


HANDICAP SIGNAGE

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

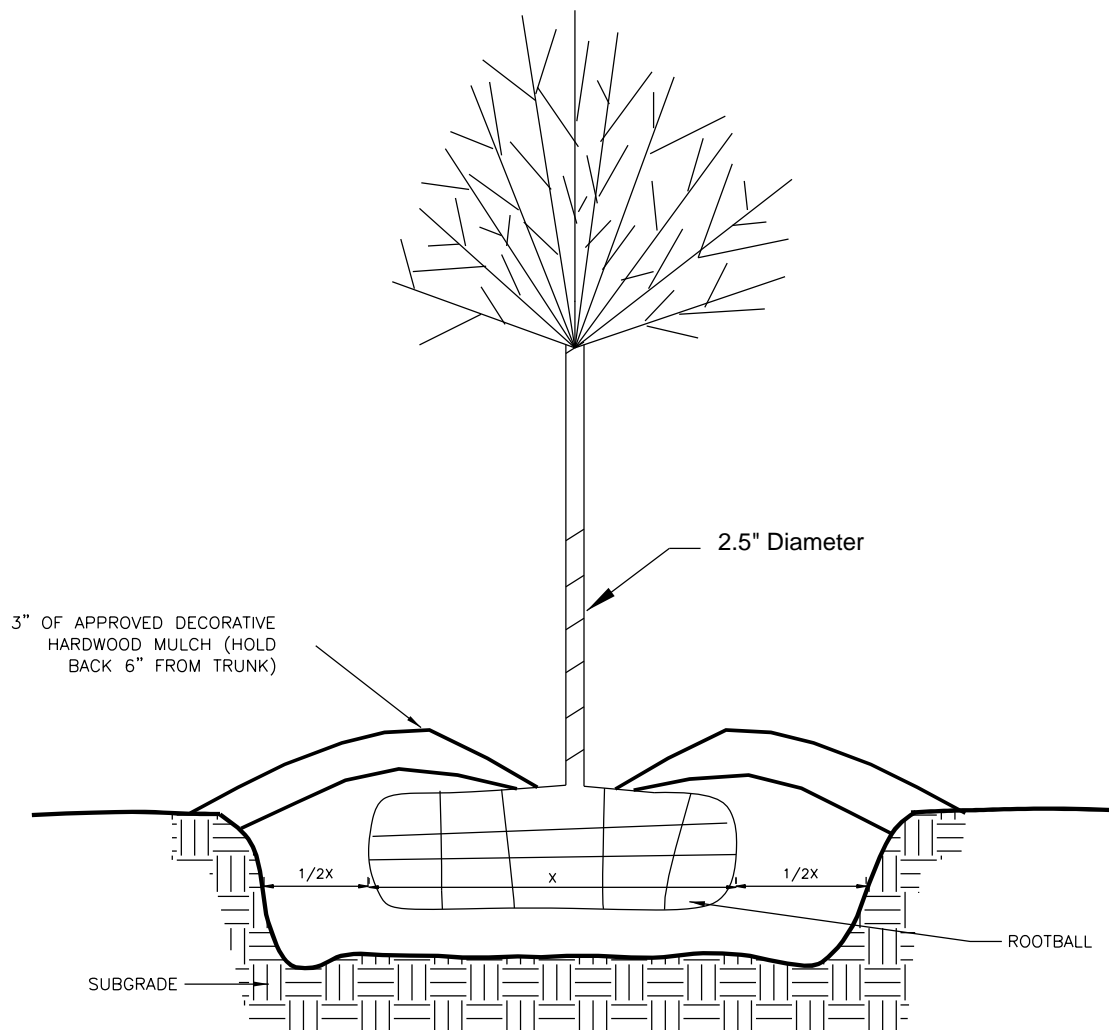
1. INSTALLATION TO INCLUDE ALL POSTS SET IN 42" CONCRETE ENCASEMENT.
2. ALL RAILS SHALL BE BOLTED WITH 12" LONG GALVANIZED CARRIAGE BOLTS, NUTS, AND WASHERS COATED WITH ANTI-SEIZE LUBRICANT; BOLT DIAMETER 1/2". NUTS AND BOLTS TO BE COUNTERSUNK INTO THE BACK OF UPRIGHT POSTS AND FLUSH WITH THE SURFACE.

RED CEDAR GUARD RAIL

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
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www.genoa-il.com



NOTES:

1. ALL PARKWAYS WITHIN THE DEDICATED STREET AREA OR OTHER PUBLIC USE AREAS SHALL BE GRADED WITH SIX INCHES (6") OF TOPSOIL AND SEEDED OR SODDED IN AN APPROVED MANNER.
2. A LIST OF THE APPROVED TREE SPECIES IS AVAILABLE FROM THE PUBLIC WORKS DEPARTMENT.
3. THERE WILL BE NO MORE THAN **Ten (10)** PERCENT OF ANY GENUS AND NO MORE THAN TEN (10%) PERCENT OF ANY SPECIES .
4. TREES SHALL BE BALLED AND BURLAPED AND GROWN ACCORDING TO GOOD NURSERY PRACTICES AS SPECIFIED IN THE ARBORICULTURAL SPECIFICATIONS MANUAL. SYNTHETIC BURLAP AND ROPE PRODUCTS SHALL NOT BE USED.
5. ALL TREES DELIVERED WITH BASKETS SHALL HAVE THE BASKETS REMOVED FROM THE TOP $\frac{1}{2}$ OF THE ROOT BALL PRIOR TO PLANTING.
6. ALL TREES SHALL BE PLANTED IN A PLUMB POSITION, WITH THE BASAL FLARE RESIDING AT GRADE OR SLIGHTLY ABOVE. STAKING OF THE TREES SHALL ONLY BE PERFORMED IF NECESSARY. STAKES WILL REMAIN ON THE SPECIMENS FOR NO LONGER THAN ONE (1) YEAR.
7. NO SOIL AMENDMENTS SHALL BE ALLOWED
8. 3" OF APPROVED DECORATIVE MULCH WILL BE INSTALLED AT THE TIME OF PLANTING (OVER THE ENTIRE ROOT ZONE)

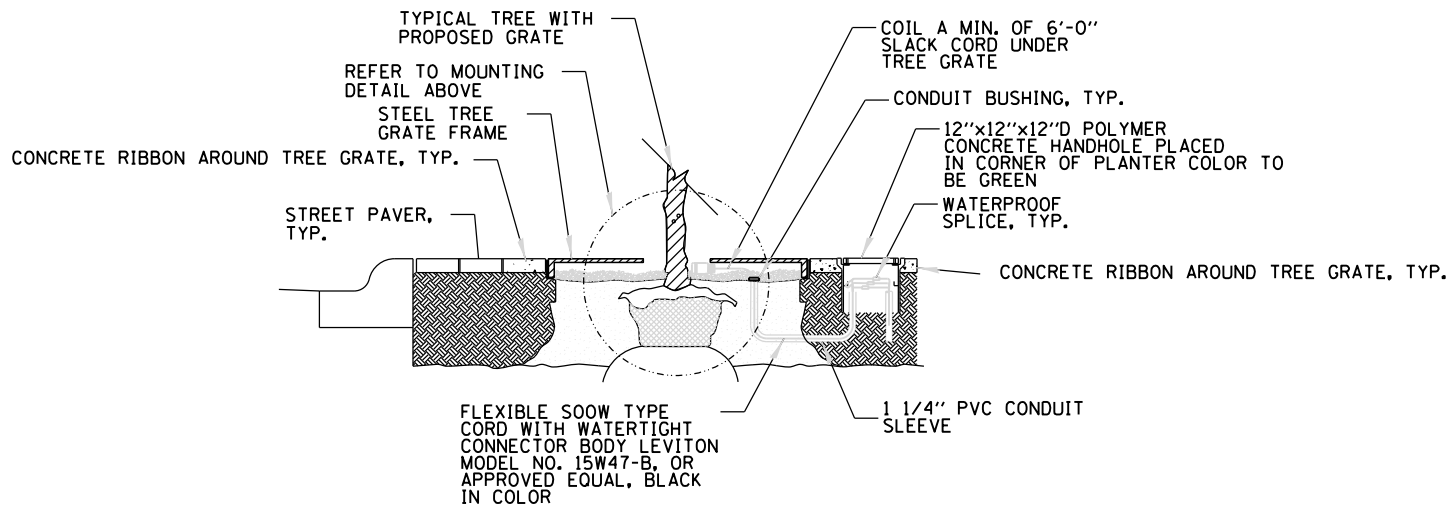
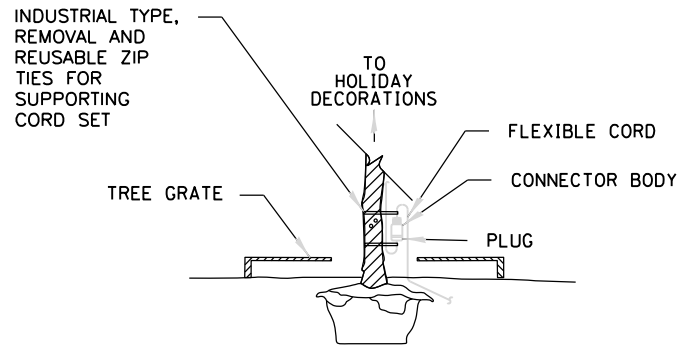
The Arboriculture Specification Manual will be adhered to and final approval will be made by City Arborist or Appointee.

TREE PLANTING

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



THE PROPOSED WATERTIGHT CORD CONNECTORS SHOWN SHALL BE USED IN CONJUNCTION WITH ONLY CORRESPONDING LEVITON WATERTIGHT PLUG MODEL NO. 14W47-B, BLACK IN COLOR, RATED IN-USE PER NEC.

PROVIDE A RECEPTACLE IN ALL TREE GRATES.

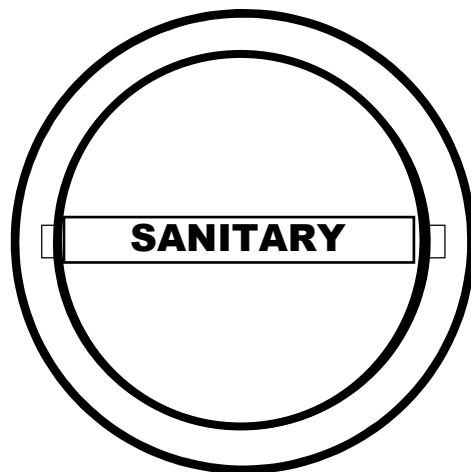
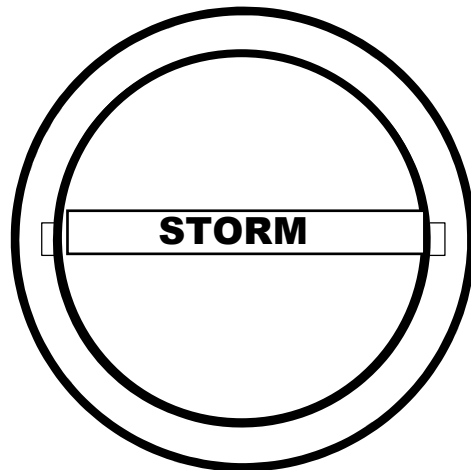
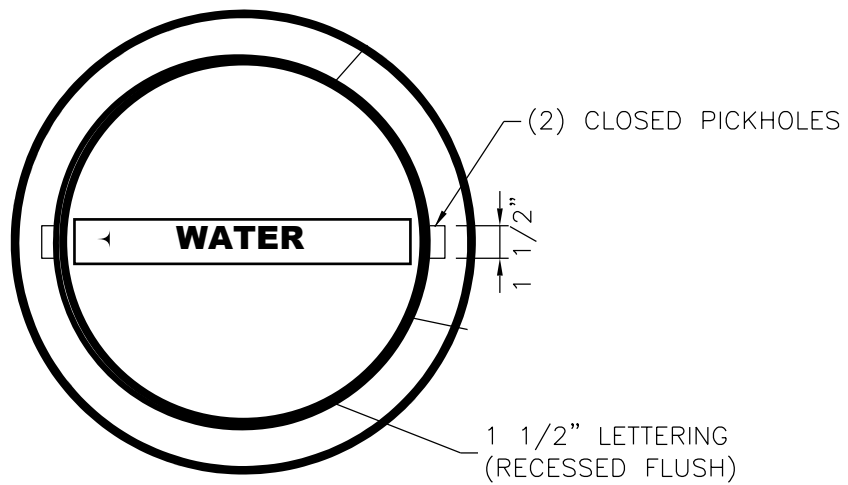
MOUNTING DETAIL FOR IN USE SERVICE

URBAN TREE PLANTING WELL WITH ELECTRICAL OUTLET

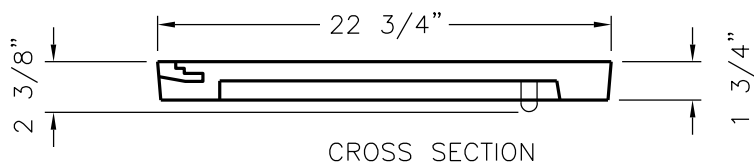
City of Genoa

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TOP VIEW



NOTES:

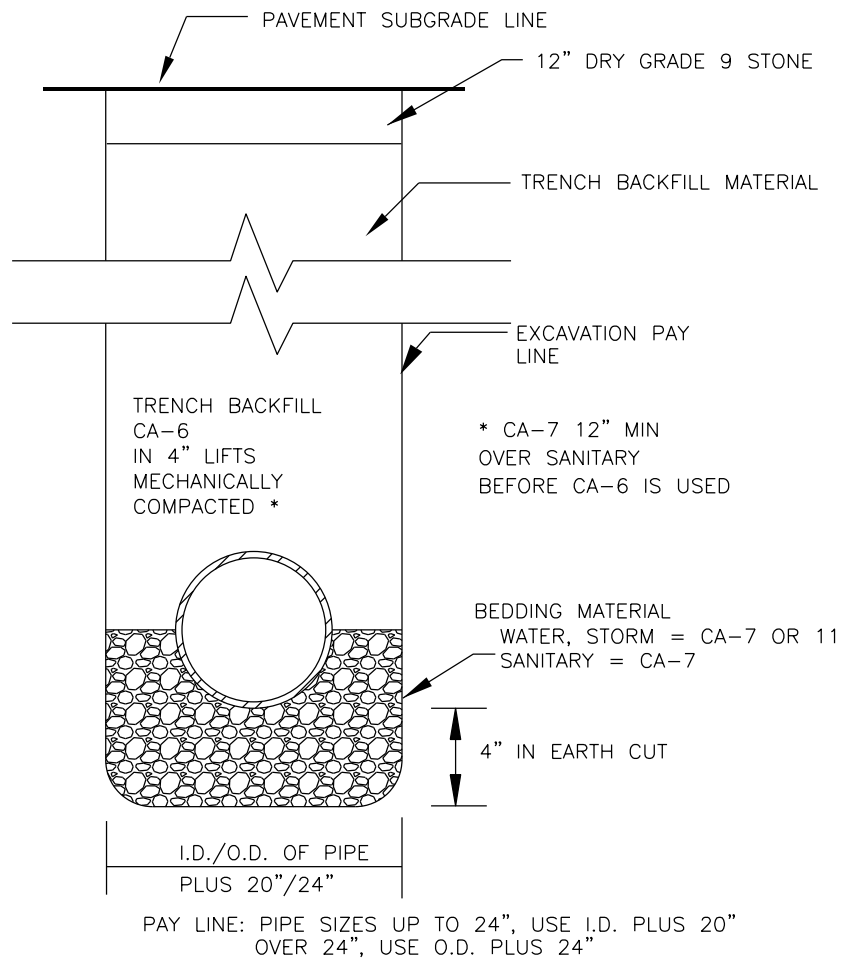
1. ALL LIDS SHALL HAVE SELF-SEALING GASKETS.
2. SEE CITY OF GENOA STANDARDS.

MANHOLE COVER

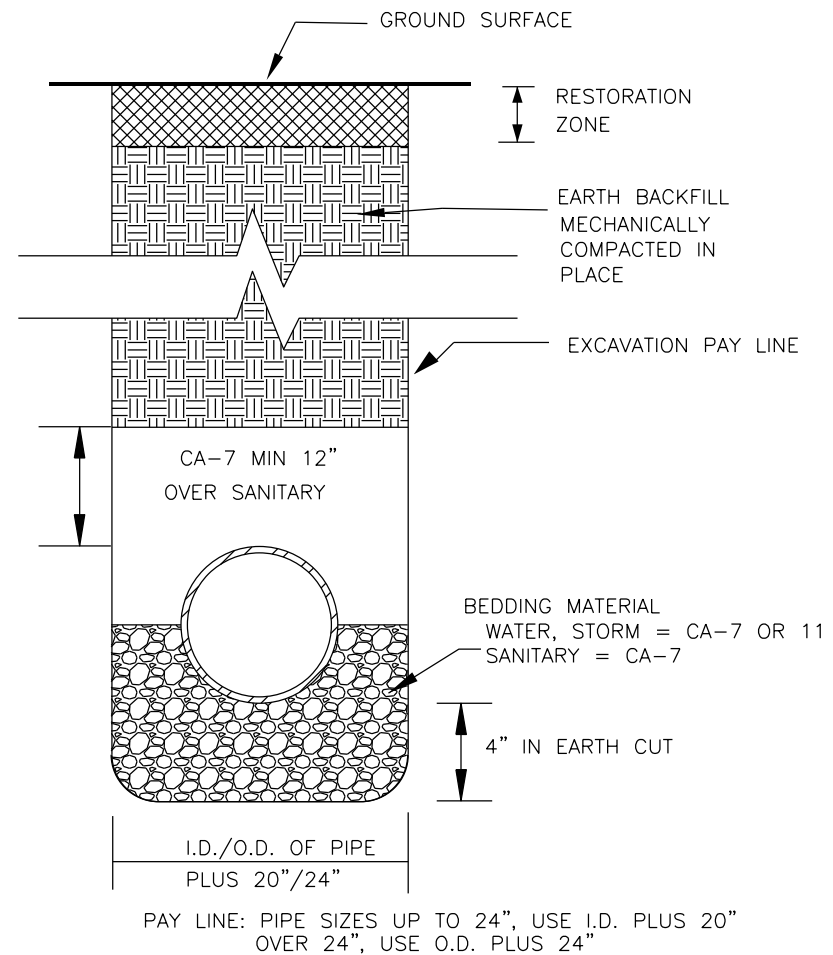
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IN PAVED AREA



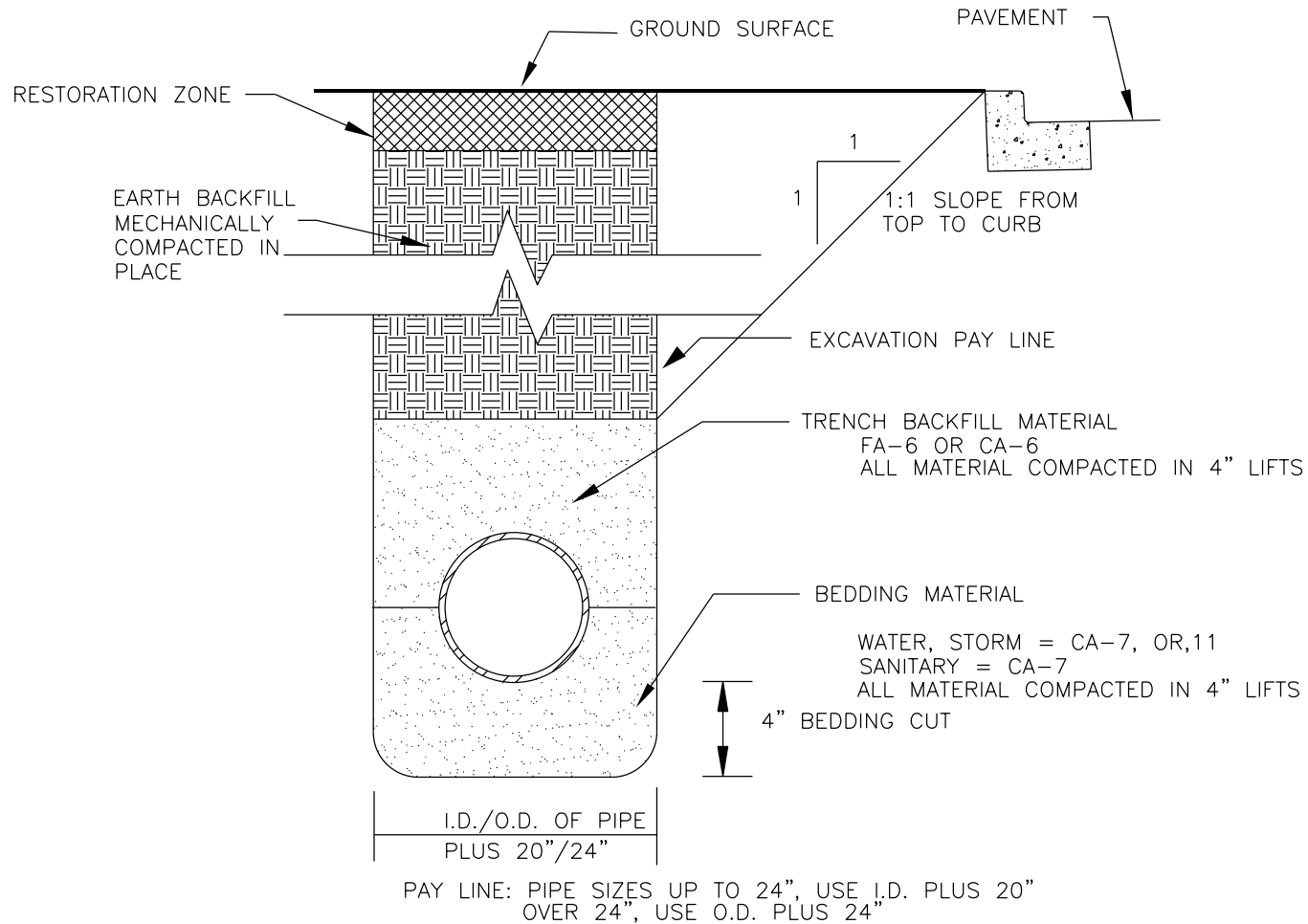
IN UNPAVED AREA

TRENCH SECTIONS

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
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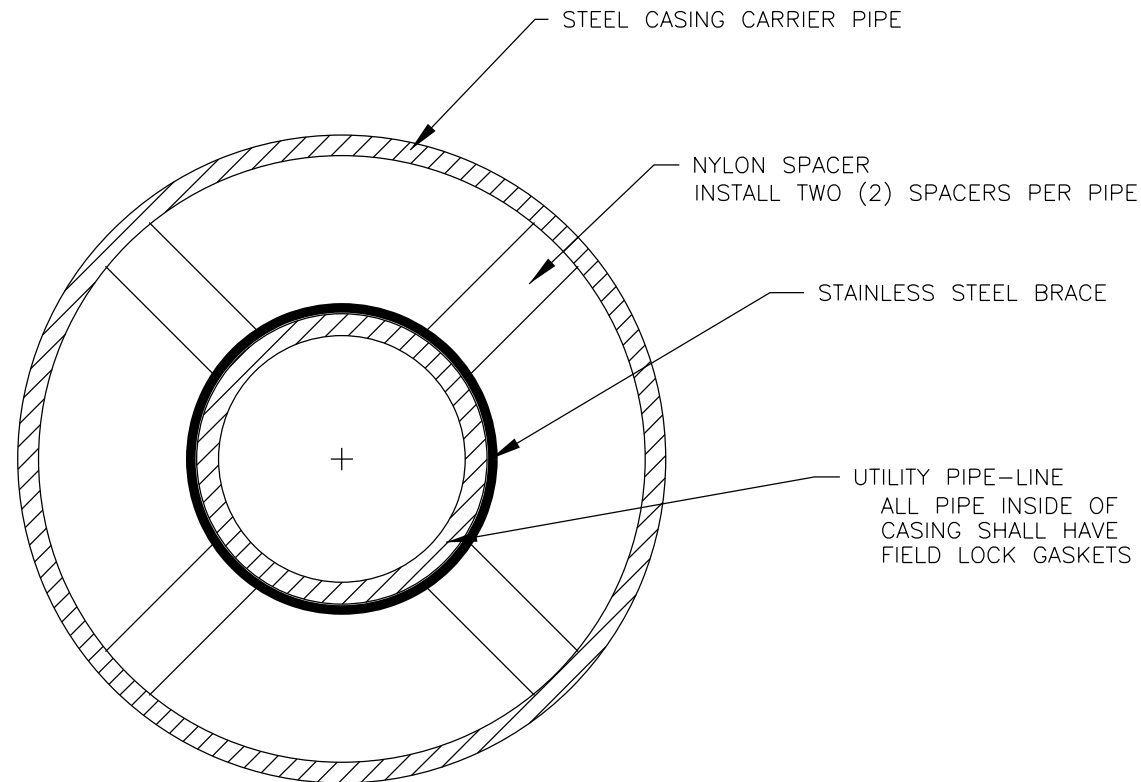


TRENCH ADJACENT TO PAVEMENT


City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

1. CASING PIPE SHALL BE MADE OF STEEL OF MINIMUM THICKNESS OF $\frac{1}{2}$ INCH WITH MINIMUM YIELD STRENGTH OF 35,000 PSI CONFORMING TO ASTM A139 GRADE A WITH CONTINUOUS FIELD WELDED BUTT JOINTS IN CONFORMANCE WITH AWWA C206.
2. ENDS OF CASING PIPE SHALL HAVE A PREFORMED RUBBER SEAL.
3. ALL CARRIER PIPES INSIDE OF CASING SHALL HAVE RESTRAINED JOINTS.
4.  SEE CITY OF GENOA SPECIFICATIONS FOR MATERIAL APPROVAL.

CASING PIPE

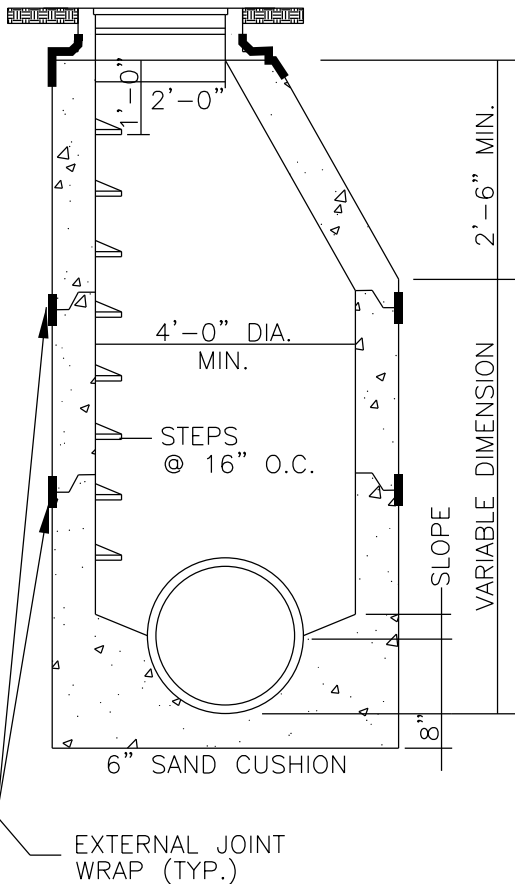
City of Genoa

Public Works Dept.
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Genoa, Illinois 60135

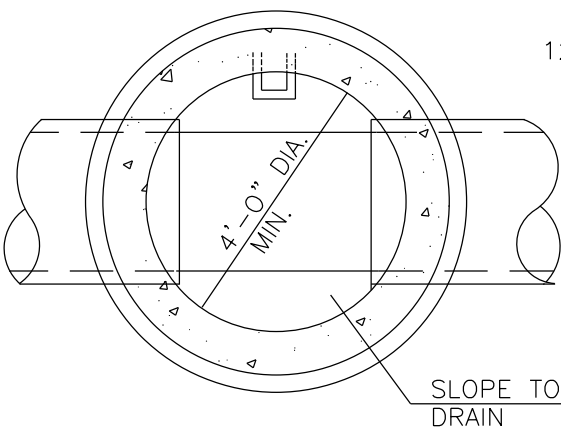
Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

NOTES:

1. STRUCTURE SHALL BE PRECAST REINFORCED CONCRETE WITH MINIMUM WALL THICKNESS OF 5" FOR 4'-0" INSIDE DIAMETER AND 6" FOR 5'-0" INSIDE DIAMETER STRUCTURES.
2. STRUCTURES SHALL BE 4'-0" INSIDE DIAMETER FOR MAIN SEWER 18" DIAMETER AND LESS, AND STRUCTURE DEPTH OF 20' OR LESS. STRUCTURES SHALL BE 5'-0" INSIDE DIAMETER FOR MAIN SEWER 21" DIAMETER AND LARGER, AND STRUCTURE DEPTH MORE THAN 20'.
3. STRUCTURE BOTTOMS SHALL BE PRECAST REINFORCED CONCRETE WITH FIRST VERTICAL SECTION PRECAST INTEGRALLY WITH IT.
4. ALL EXTERIOR SURFACES OF STRUCTURE SHALL HAVE A FACTORY APPLIED BITUMINOUS COATING.
5. ALL JOINTS BETWEEN PRECAST ELEMENTS, ADJUSTING RINGS, AND MANHOLE FRAMES SHALL BE SET IN PLACE WITH A BUTYL RUBBER JOINT SEALANT. BARREL SECTIONS SHALL BE SEALED USING EITHER A BUTYL RUBBER JOINT SEALANT OR A RUBBER GASKET. A 9" WIDE POLYETHYLENE EXTERNAL SEAL SHALL BE APPLIED TO ALL STRUCTURE JOINTS.
6. STRUCTURE STEPS SHALL BE MADE OF STEEL REINFORCED PLASTIC USING AN APPROVED PLASTIC MEETING ASTM D4101, TYPE 11, GRADE 49108, OVER #3 GRADE 60, ASTM AG15 REINFORCING BAR. STEPS SHALL BE AT 16" CENTERS.
7. A MAXIMUM OF TWO (2) ADJUSTMENT RINGS FOR A MAXIMUM ADJUSTMENT OF 8" IS ALLOWED. THE TOP ADJUSTMENT RING SHALL BE MADE OF RECYCLED RUBBER WHEN THE STRUCTURE IS INSTALLED IN A PAVED VEHICLE TRAFFIC AREA.
8. EXTERNAL CHIMNEY SEALS SHALL BE INSTALLED WHICH SHALL CAPTURE AT LEAST 4" OF THE STRUCTURE FRAME, ALL OF THE ADJUSTING RINGS, AND 4" OF THE UPPER CONE SECTION.
9. STRUCTURE LID SHALL HAVE A 1" CONCEALED PICKHOLE AND **HAVE THE WORD SANITARY STAMPED ON THE CENTER OF LID.**
10. THE RIM ELEVATION FOR STRUCTURES WITHIN THE FLOODPLAIN MUST BE SET 24" ABOVE THE BASE FLOOD ELEVATION. FRAME AND LID MUST BE WATER-TIGHT LOCK DOWN.
11. PIPE CONNECTIONS SHALL BE MADE WITH THE USE OF PRECAST OPENINGS AND FLEXIBLE MANHOLE COUPLINGS. CONNECTIONS TO EXISTING STRUCTURES SHALL BE MADE WITH THE USE OF MACHINE-CORED OPENINGS AND FLEXIBLE MANHOLE COUPLINGS.
12. **SEE CITY OF GENOA APPROVED PRODUCTS AND SPECIFICATION LIST.**



PROFILE VIEW



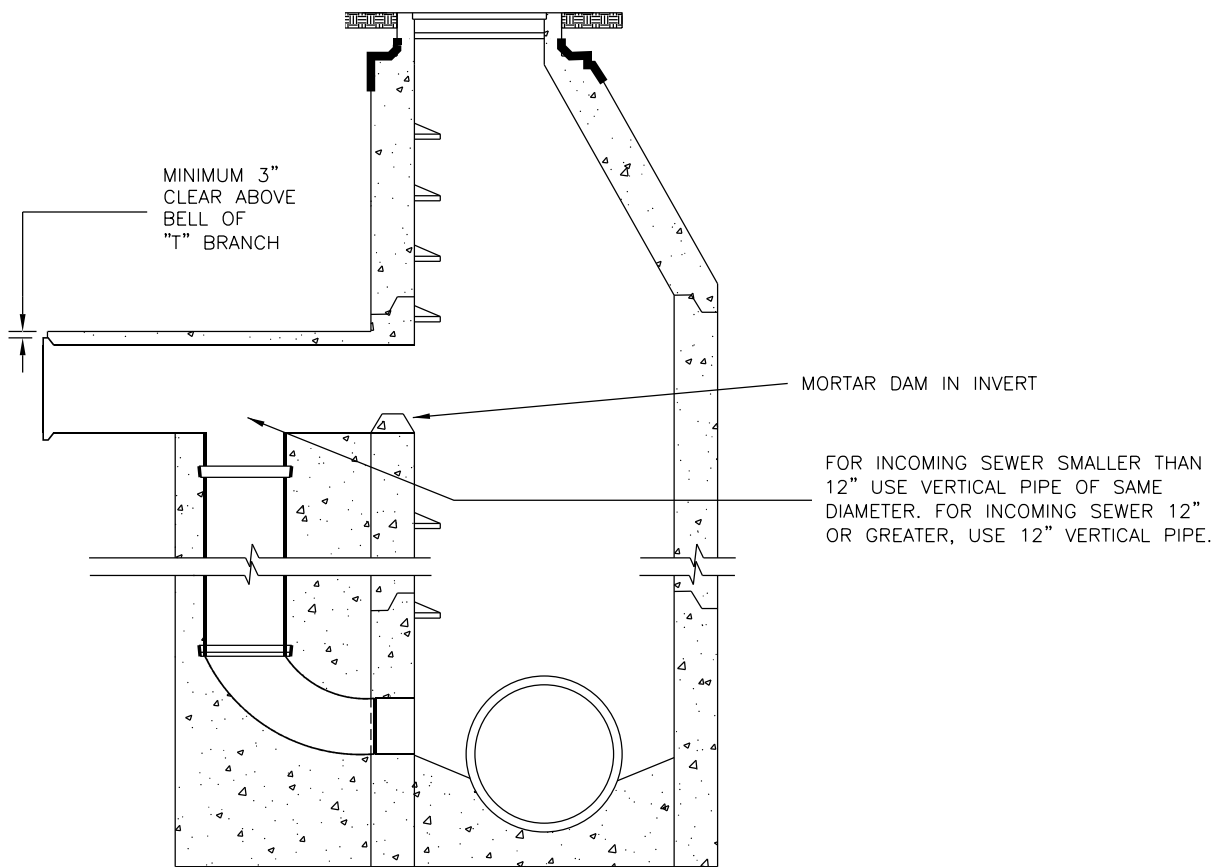
PLAN VIEW

SANITARY MANHOLE

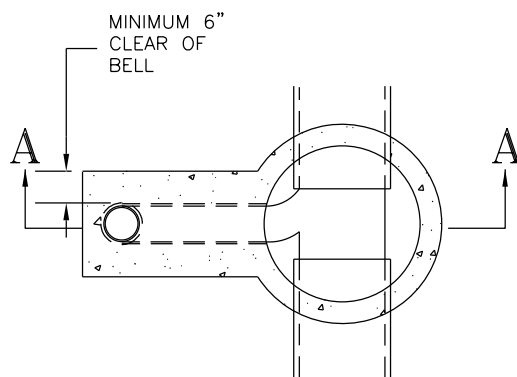
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
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PROFILE VIEW



PLAN VIEW

NOTES:

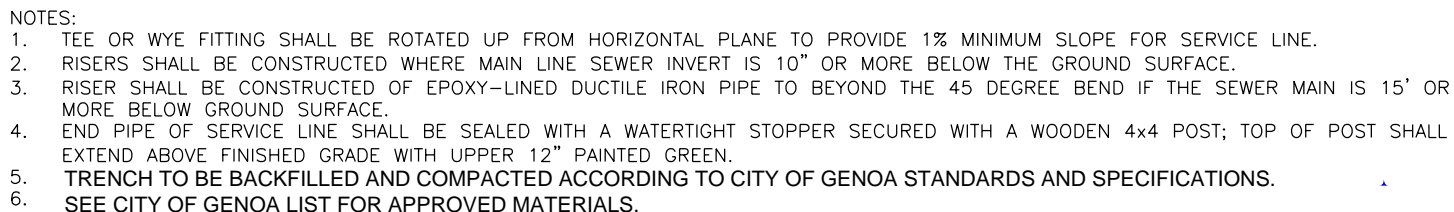
1. FRAME, LID, ADJUSTING RINGS, AND STRUCTURE PER SANITARY SEWER MANHOLE DETAIL.
2. A DROP MANHOLE SHALL BE CONSTRUCTED WHEN THE INVERT OF THE INFLUENT SEWER IS 2.0 FEET OR MORE ABOVE THE OULET OR MAIN SEWER INVERT.
3. SEE CITY OF GENOA SPECIFICATION AND PRODUCTS LIST.

SANITARY DROP MANHOLE

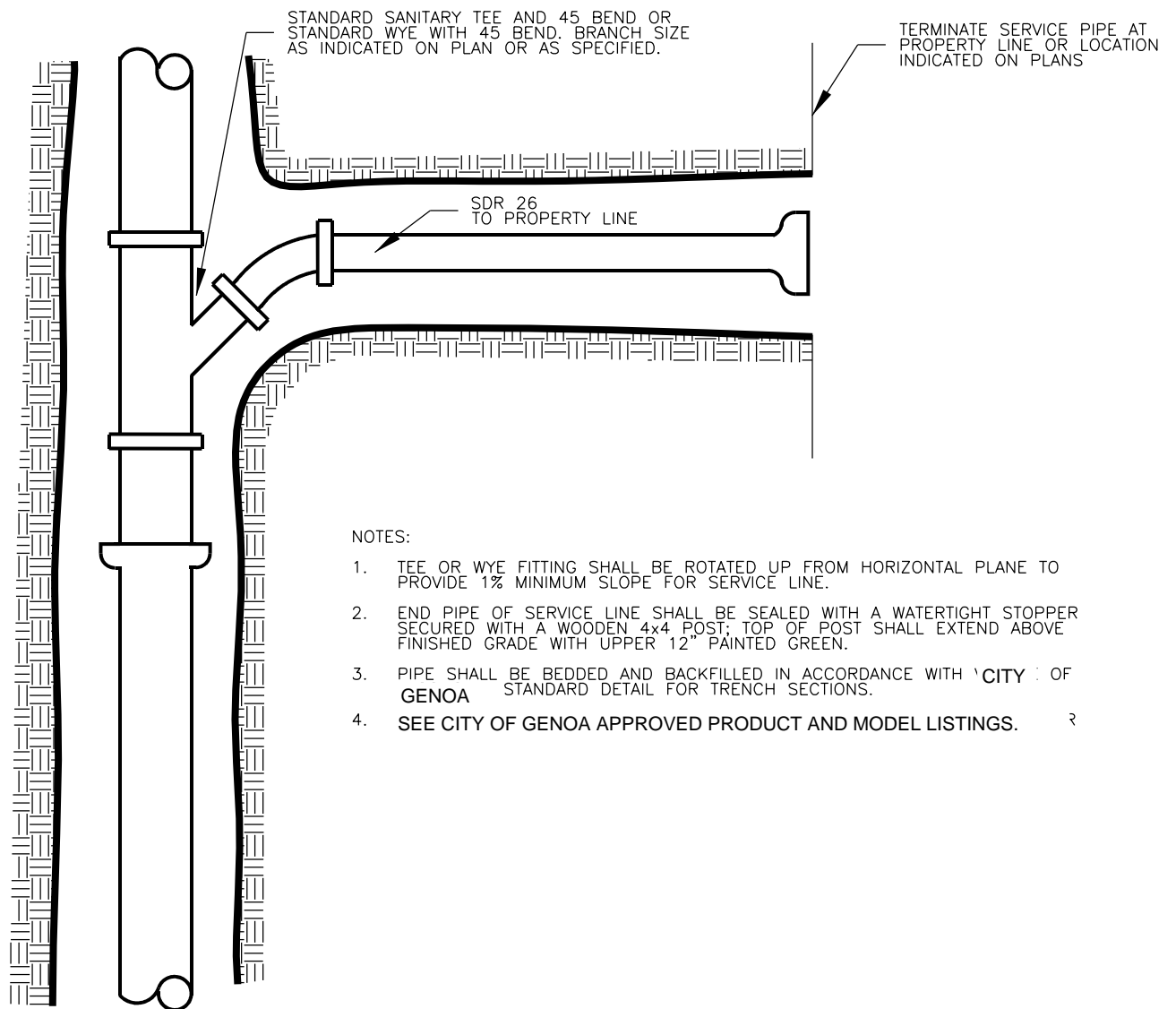
City of Genoa

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Genoa, Illinois 60135

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Fax 815-784-4271
www.genoa-il.com



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NOTES:

1. TEE OR WYE FITTING SHALL BE ROTATED UP FROM HORIZONTAL PLANE TO PROVIDE 1% MINIMUM SLOPE FOR SERVICE LINE.
2. END PIPE OF SERVICE LINE SHALL BE SEALED WITH A WATERTIGHT STOPPER SECURED WITH A WOODEN 4x4 POST; TOP OF POST SHALL EXTEND ABOVE FINISHED GRADE WITH UPPER 12" PAINTED GREEN.
3. PIPE SHALL BE BEDDED AND BACKFILLED IN ACCORDANCE WITH 'CITY OF GENOA' STANDARD DETAIL FOR TRENCH SECTIONS.
4. SEE CITY OF GENOA APPROVED PRODUCT AND MODEL LISTINGS.

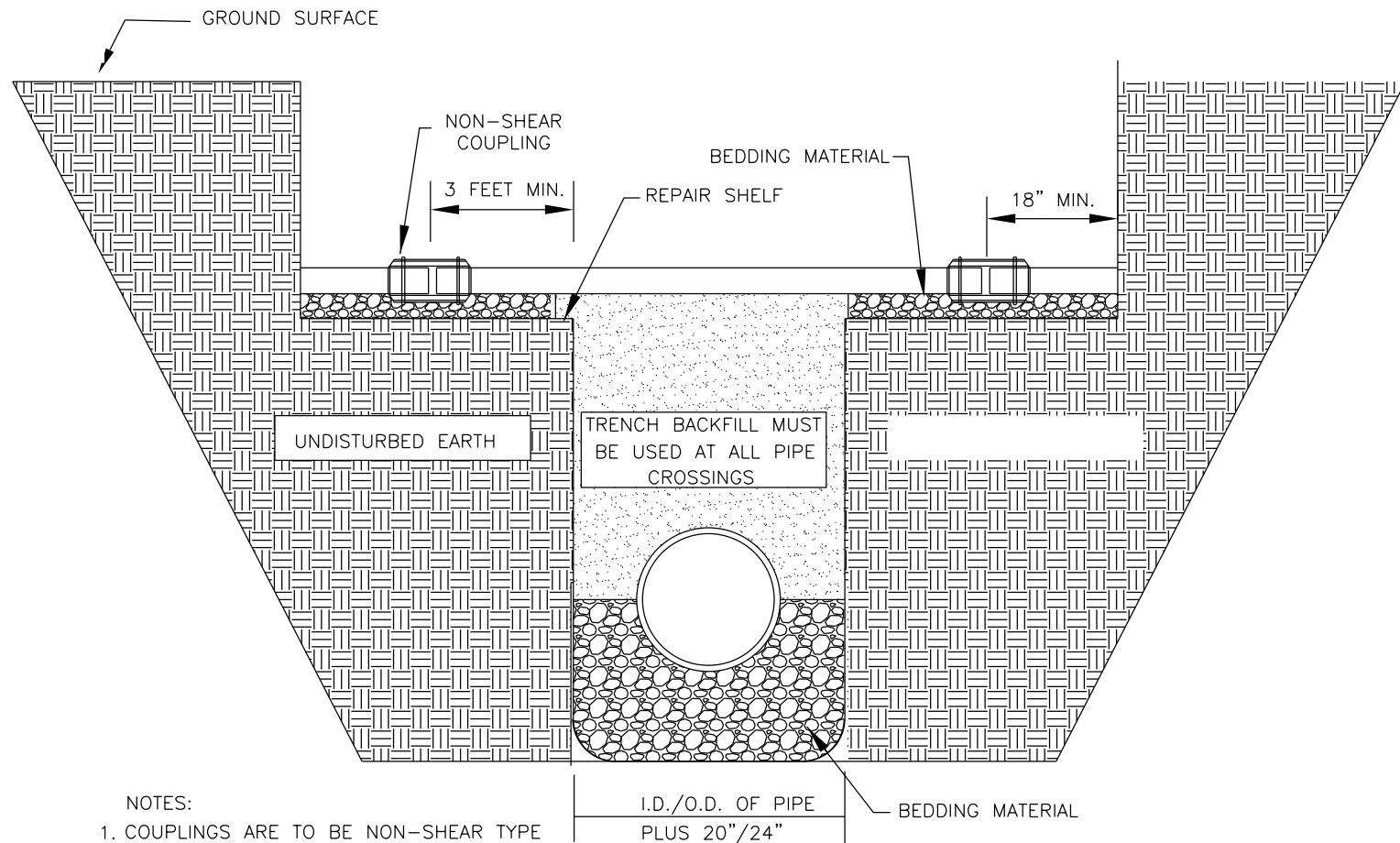
PLAN

SANITARY SERVICE

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

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Fax 815-784-4271
www.genoa-il.com



NOTES:

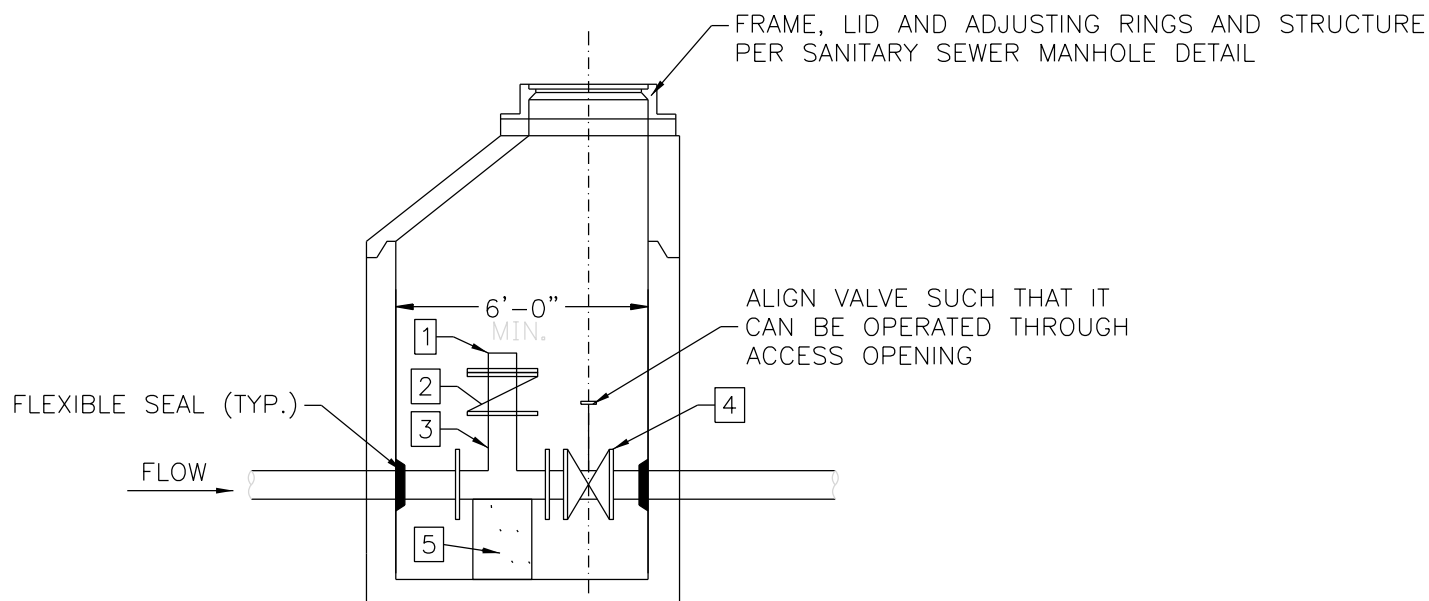
1. COUPLINGS ARE TO BE NON-SHEAR TYPE
2. THE DISRUPTED PIPE SHALL BE REPAIRED WITH PVC SDR-26 OR IF THE DEPTH IS 15' AND GREATER USE EPOXY LINED DUCTILE IRON
3. FIELD CUTS ON PIPE SHALL BE NO CLOSER THAN 18 INCHES FROM EXISTING BELL OR SPIGOT.
4. WHEN AT ALL POSSIBLE, USE EXISTING BELL OR SPIGOT TO ELIMINATE THE USE OF (2) COUPLINGS
5. GRADE MUST BE KEPT FOR ALL GRAVITY LINES
6. SEE APPROVED CITY OF GENOA LISTS FOR PRODUCTS AND MANUFACTURERS.

SANITARY SEWER REPAIR @ CROSSING

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
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- | | |
|---|------------------------------|
| 1 | CAP |
| 2 | BACKFLOW PREVENTER |
| 3 | EPOXY LINED DUCTILE IRON TEE |
| 4 | RESILIENT WEDGE GATE VALVE |
| 5 | CONCRETE BLOCK SUPPORT |

NOTE:

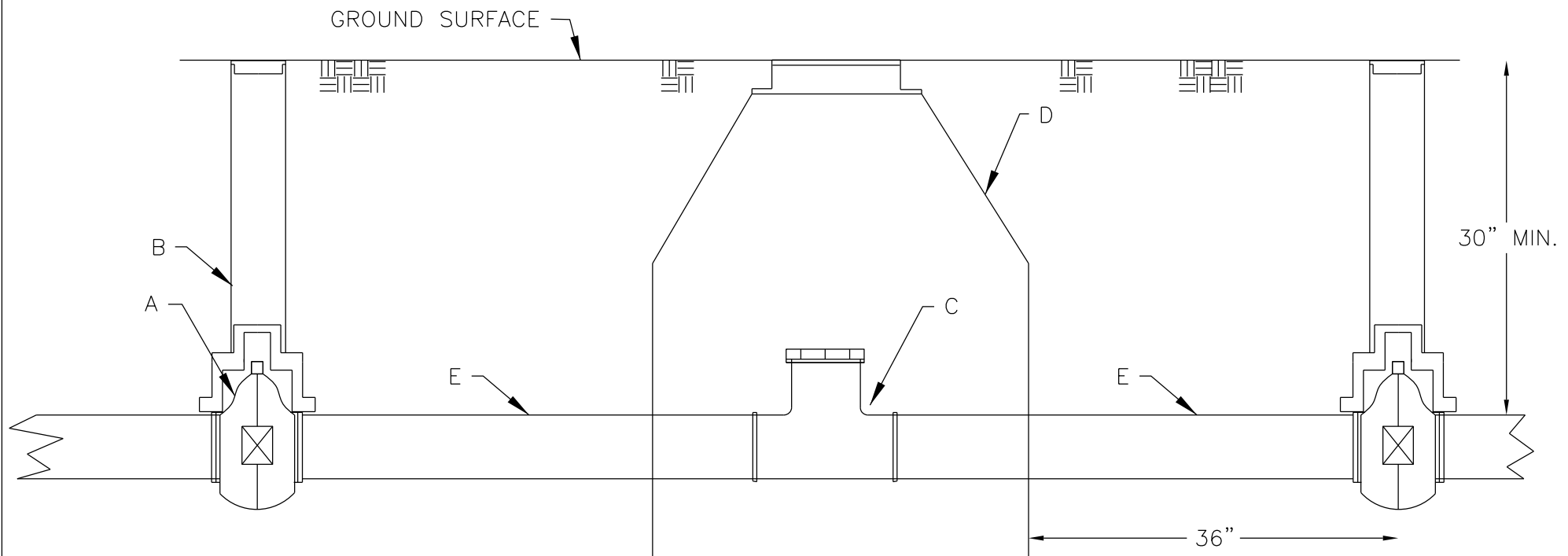
1. SEE CITY OF GENOA APPROVED LISTS FOR PRODUCTS AND MANUFACTURERS.

FORCEMAIN BYPASS PUMPING STRUC.

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

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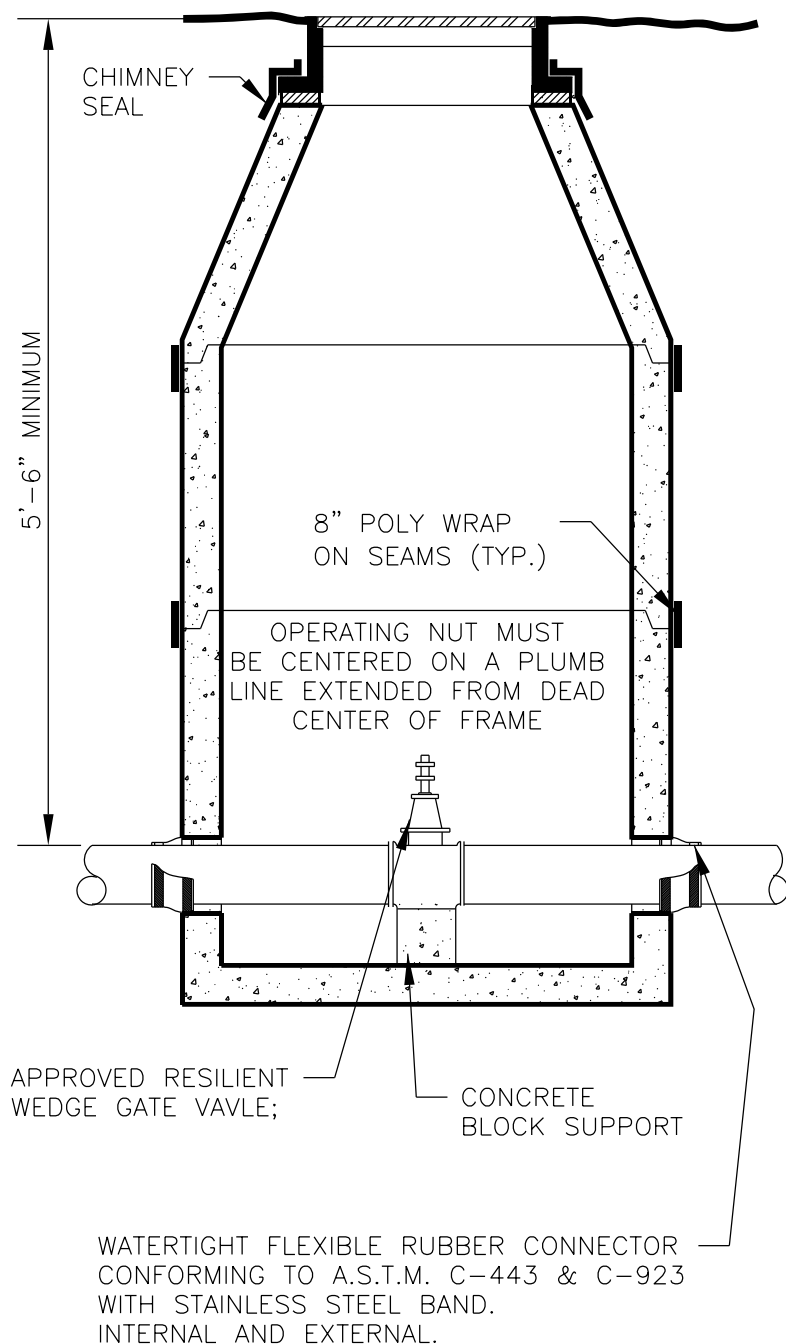
1. THE SETUP INCLUDES THE FOLLOWING:
 - A (2) MUELLER A-2360 RESILIENT WEDGE GATE VALVES
 - B (2) VALVE BOXES WITH VALVE BOX STABILIZERS
 - C (1) EPOXY LINED DUCTILE IRON TEE WITH TEE FACING STRAIGHT UP W/CAP
 - D (1) 4' DIA. MANHOLE PER **COG** SANITARY MH DETAIL
 - E (2) SECTIONS OF EPOXY COATED DUCTILE IRON PIPE
2. SEE APPROVED CITY OF GENOA PRODUCTS LIST FOR MANUFACTURER AND MODEL NUMBERS.

FORCE MAIN CLEAN-OUT

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
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NOTES:

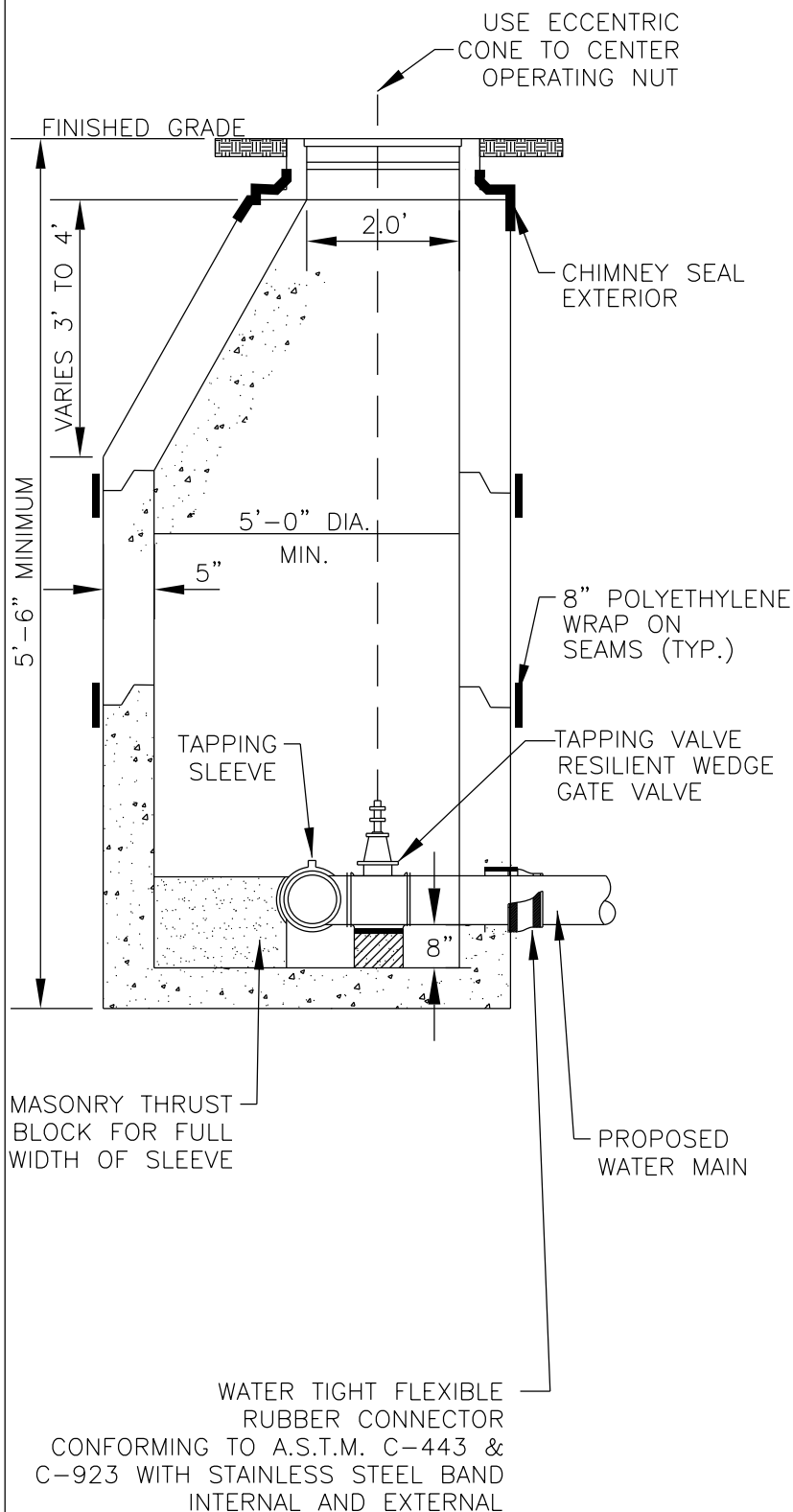
1. ALL VALVES MUST BE ENCLOSED IN A VAULT UNLESS OTHERWISE SPECIFIED.
2. STRUCTURE SHALL BE PRECAST REINFORCED CONCRETE WITH MINIMUM WALL THICKNESS OF 5" FOR 4'-0" INSIDE DIAMETER AND 6" FOR 5'-0" INSIDE DIAMETER STRUCTURES.
3. STRUCTURE SHALL BE 4'-0" INSIDE DIAMETER FOR 8" VALVES AND LESS. STRUCTURE SHALL BE 5'-0" INSIDE DIAMETER FOR 10" VALVES AND LARGER.
4. STRUCTURE BOTTOMS SHALL BE PRECAST REINFORCED CONCRETE WITH FIRST VERTICAL SECTION PRECAST INTEGRALLY WITH IT.
5. ALL EXTERIOR SURFACES OF STRUCTURE SHALL HAVE A FACTORY APPLIED BITUMINOUS COATING.
6. ALL JOINTS BETWEEN PRECAST ELEMENTS, ADJUSTING RINGS, AND MANHOLE FRAMES SHALL BE SET IN PLACE WITH A BUTYL RUBBER JOINT SEALANT. BARREL SECTIONS SHALL BE SEALED USING EITHER A BUTYL RUBBER JOINT SEALANT OR A RUBBER GASKET. A 9" WIDE POLYETHYLENE EXTERNAL SEAL SHALL BE APPLIED TO ALL STRUCTURE JOINTS.
7. OPERATING NUT OF VALVE MUST BE CENTERED ON A PLUMB LINE EXTENDED FROM CENTER OF FRAME OPENING.
8. A MAXIMUM OF TWO (2) ADJUSTMENT RINGS FOR A MAXIMUM ADJUSTMENT OF 8" IS ALLOWED. THE TOP ADJUSTMENT RING SHALL BE MADE OF RECYCLED RUBBER WHEN THE STRUCTURE IS INSTALLED IN A PAVED VEHICLE TRAFFIC AREA.
9. EXTERNAL CHIMNEY SEALS SHALL BE INSTALLED WHICH SHALL CAPTURE AT LEAST 4" OF THE STRUCTURE FRAME, ALL OF THE ADJUSTING RINGS, AND 4" OF THE UPPER CONE SECTION.
10. STRUCTURE LID SHALL HAVE A TWO, 1" CONCEALED PICKHOLES AND HAVE THE WORD "WATER" CAST INTO IT.
11. THE RIM ELEVATION FOR STRUCTURES WITHIN THE FLOODPLAIN MUST BE SET 24" ABOVE THE BASE FLOOD ELEVATION. FRAME AND LID MUST BE WATER-TIGHT LOCK DOWN.
12. PIPE PENETRATIONS SHALL BE MADE WITH THE USE OF PRECAST OPENINGS AND FLEXIBLE RUBBER CONNECTORS.
13. SEE APPROVED CITY OF GENOA PRODUCTS LIST.

VALVE AND VAULT

City of Genoa

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Genoa, Illinois 60135

Tel. 815-784-2327
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NOTES:

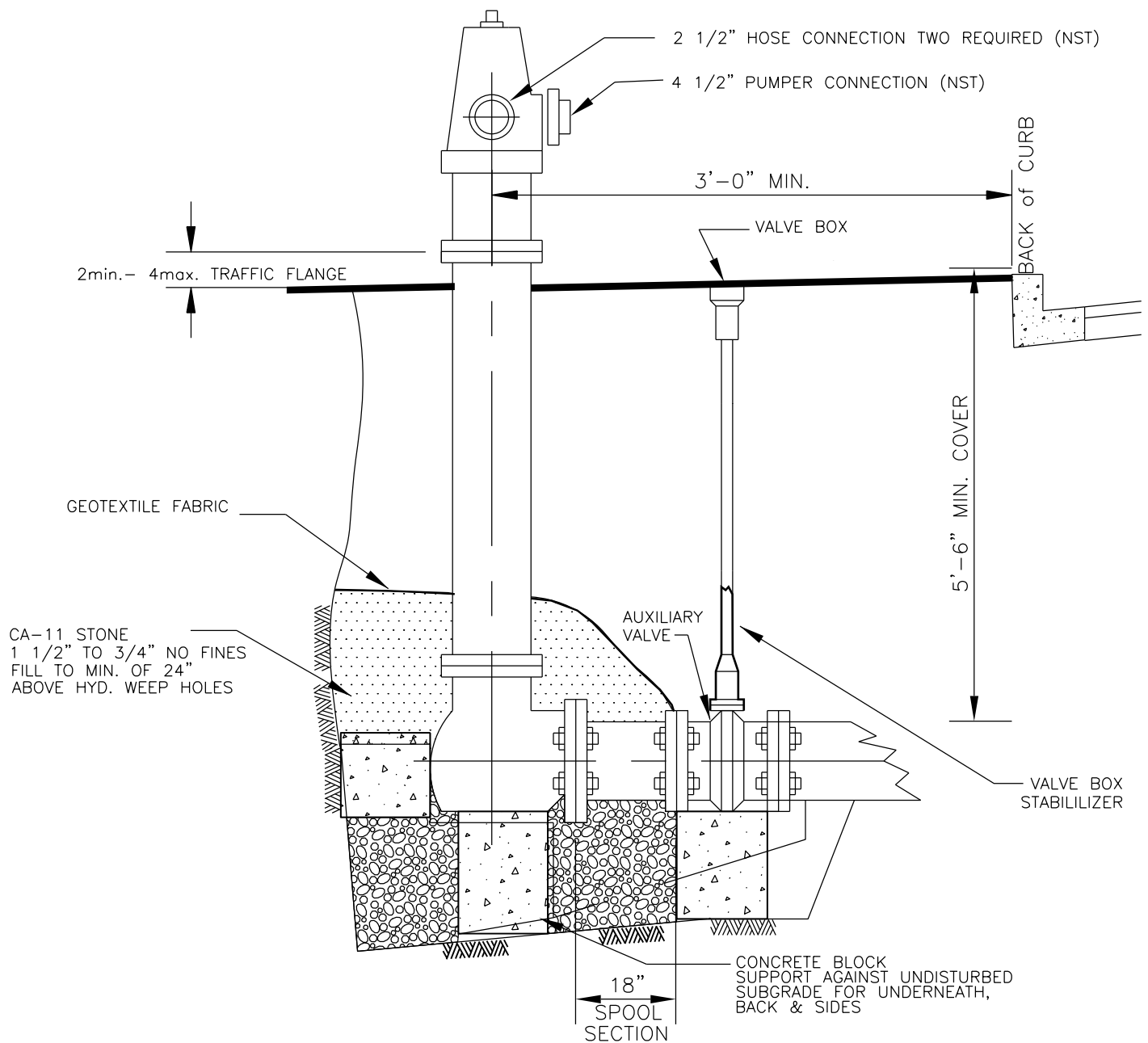
1. ALL VALVES MUST BE ENCLOSED IN A VAULT UNLESS OTHERWISE SPECIFIED.
2. STRUCTURE SHALL BE PRECAST REINFORCED CONCRETE WITH MINIMUM WALL THICKNESS OF 5" FOR 4'-0" INSIDE DIAMETER AND 6" FOR 5'-0" INSIDE DIAMETER STRUCTURES.
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12. PIPE PENETRATIONS SHALL BE MADE WITH THE USE OF PRECAST OPENINGS AND FLEXIBLE RUBBER CONNECTORS.
13. **SEE APPROVED CITY OF GENOA PRODUCTS LIST FOR MANUFACTURER AND MODEL #S.**

PRESSURE CONNECTION AND VAULT

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

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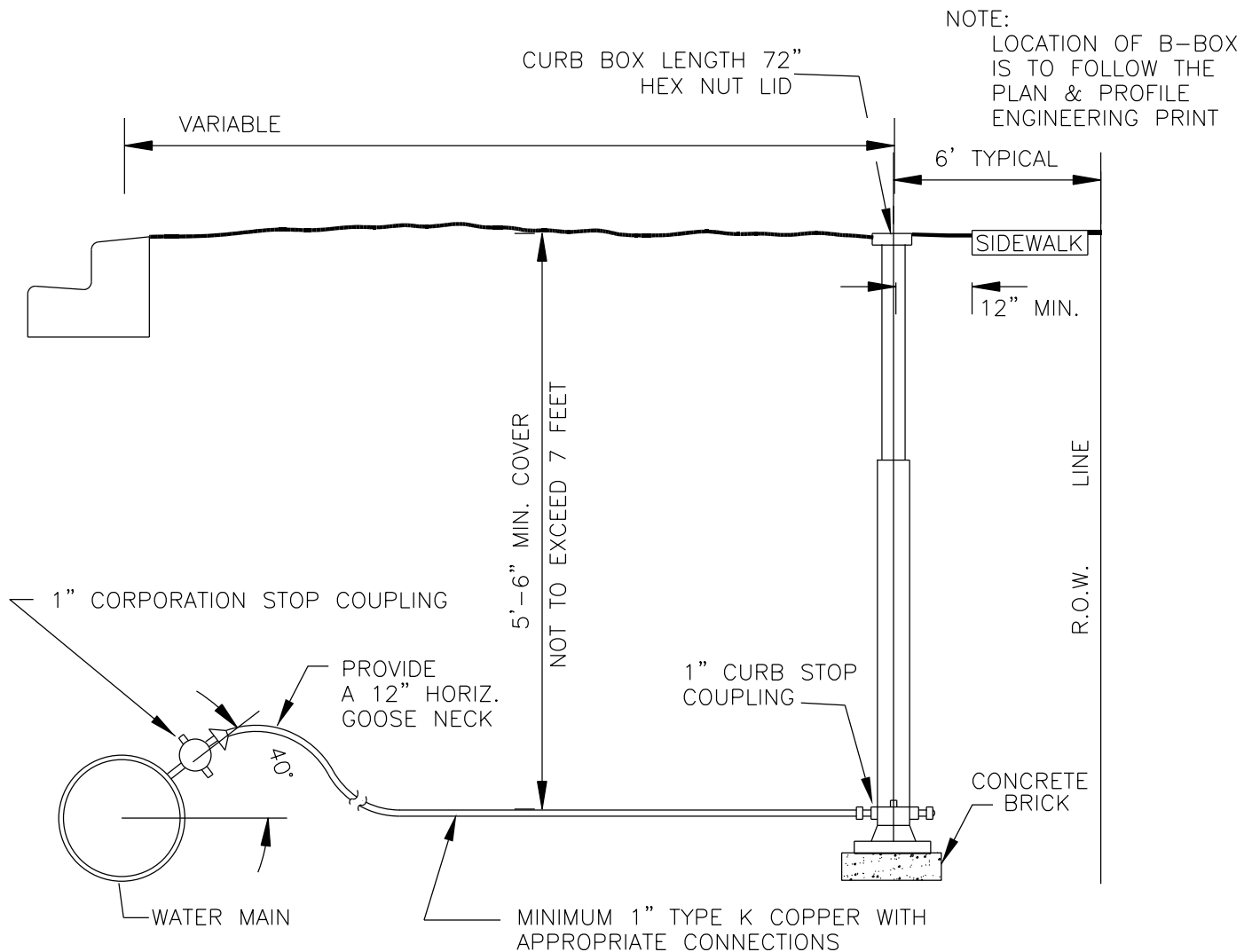
1. HYDRANT SHALL HAVE FRESH COAT OF PAINT.
2. CONCRETE THRUST BLOCKING SHALL NOT BLOCK OR OBSTRUCT WEEP HOLES.
3. ALL FITTINGS SHALL BE RESTRAINED.
4. SEE APPROVED CITY OF GENOA PRODUCTS LIST FOR MANUFACTURER AND MODEL NUMBERS.

FIRE HYDRANT

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

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NOTES:

1. ALL TAPS ON DUCTILE IRON PIPE (2" AND BELOW) SHALL BE DONE USING DIRECT TAP METHOD
WATER SERVICE CONNECTIONS TO WATER MAINS SHALL USE THE DRILLING AND TAPPING
METHOD INTO A PRESSURIZED MAIN.
2. WHERE STORM LINES ARE BETWEEN B-BOX AND HOUSE AND SHALLower THAN WATER
SERVICE A SCHEDULE 40 PVC PIPE SHALL BE INSTALLED UNDER STORM LINE
3. IF CURB BOX IS INSTALLED IN PAVEMENT AREAS USE TRAFFIC RATED (B-BOX COVER)
- 4 **SERVICE LINE TO BE SINGLE PIECE FROM CORPORATION STOP TO CURB STOP.**
SEE APPROVED CITY OF GENOA PRODUCTS LIST FOR MANUFACTURER AND MODEL NUMBERS.

3.1

WATER SERVICE

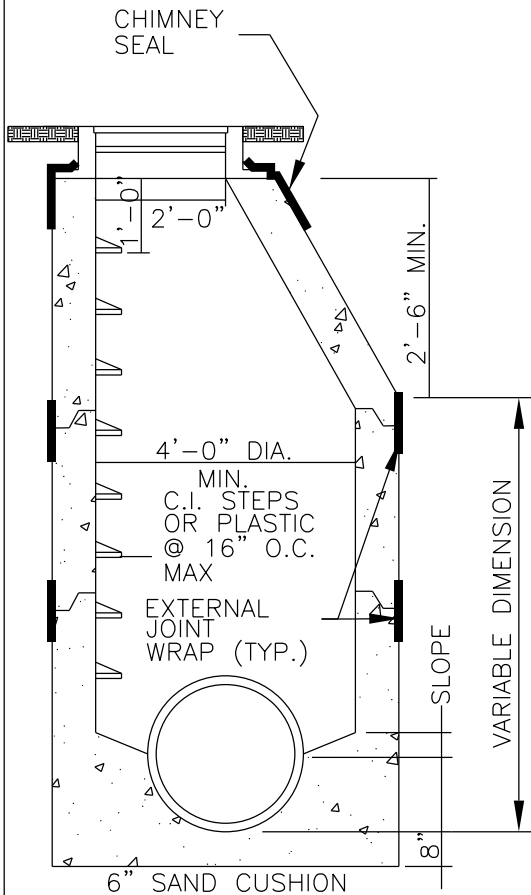
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

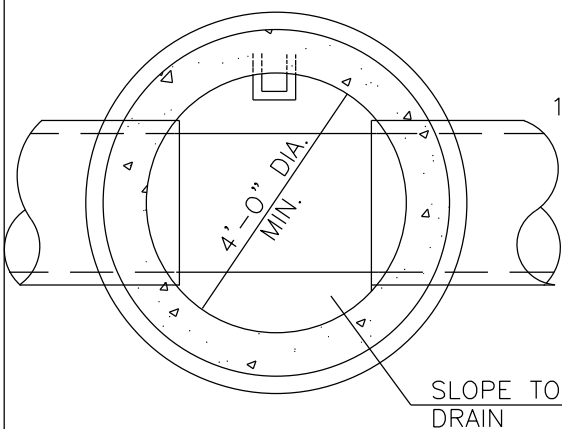
Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

NOTES:

1. STRUCTURE SHALL BE PRECAST REINFORCED CONCRETE WITH MINIMUM WALL THICKNESS OF 5" FOR 4'-0" INSIDE DIAMETER AND 6" FOR 5'-0" INSIDE DIAMETER STRUCTURES.
2. STRUCTURES SHALL BE 4'-0" INSIDE DIAMETER FOR MAIN SEWER 18" DIAMETER AND LESS, AND STRUCTURE DEPTH OF 20' OR LESS. STRUCTURES SHALL BE 5'-0" INSIDE DIAMETER FOR MAIN SEWER 21" DIAMETER AND LARGER, AND STRUCTURE DEPTH MORE THAN 20'.
3. STRUCTURE BOTTOMS SHALL BE PRECAST REINFORCED CONCRETE WITH FIRST VERTICAL SECTION PRECAST INTEGRALLY WITH IT.
4. ALL JOINTS BETWEEN PRECAST ELEMENTS, ADJUSTING RINGS, AND MANHOLE FRAMES SHALL BE SET IN PLACE WITH A BUTYL RUBBER JOINT SEALANT. BARREL SECTIONS SHALL BE SEALED USING EITHER A BUTYL RUBBER JOINT SEALANT OR A RUBBER GASKET. A 9" WIDE POLYETHYLENE EXTERNAL SEAL SHALL BE APPLIED TO ALL STRUCTURE JOINTS.
5. STRUCTURE STEPS SHALL BE MADE OF STEEL REINFORCED PLASTIC USING AN APPROVED PLASTIC MEETING ASTM D4101, TYPE 11, GRADE 49108, OVER #3 GRADE 60, ASTM AG15 REINFORCING BAR. STEPS SHALL BE AT 16" CENTERS.
6. A MAXIMUM OF TWO (2) ADJUSTMENT RINGS FOR A MAXIMUM ADJUSTMENT OF 8" IS ALLOWED. THE TOP ADJUSTMENT RING SHALL BE MADE OF RECYCLED RUBBER WHEN THE STRUCTURE IS INSTALLED IN A PAVED VEHICLE TRAFFIC AREA.
7. EXTERNAL CHIMNEY SEALS SHALL BE INSTALLED WHICH SHALL CAPTURE AT LEAST 4" OF THE STRUCTURE FRAME, ALL OF THE ADJUSTING RINGS, AND 4" OF THE UPPER CONE SECTION.
8. STRUCTURE WITH CLOSED LIDS SHALL HAVE A 1" CONCEALED PICKHOLE AND HAVE THE WORD "STORM" CAST INTO IT.
9. PIPE CONNECTIONS SHALL BE MADE WITH THE USE OF PRECAST OPENINGS. CONNECTIONS TO EXISTING STRUCTURES SHALL BE MADE WITH THE USE OF MACHINE-CORED OPENINGS. THE INTERNAL AND EXTERNAL PIPE PENETRATIONS SHALL BE TUCKPOINTED.
10. SEE APPROVED CITY OF GENOA PRODUCTS LIST FOR MANUFACTURER AND MODEL NUMBERS.



PROFILE



PLAN VIEW

STORM MANHOLE

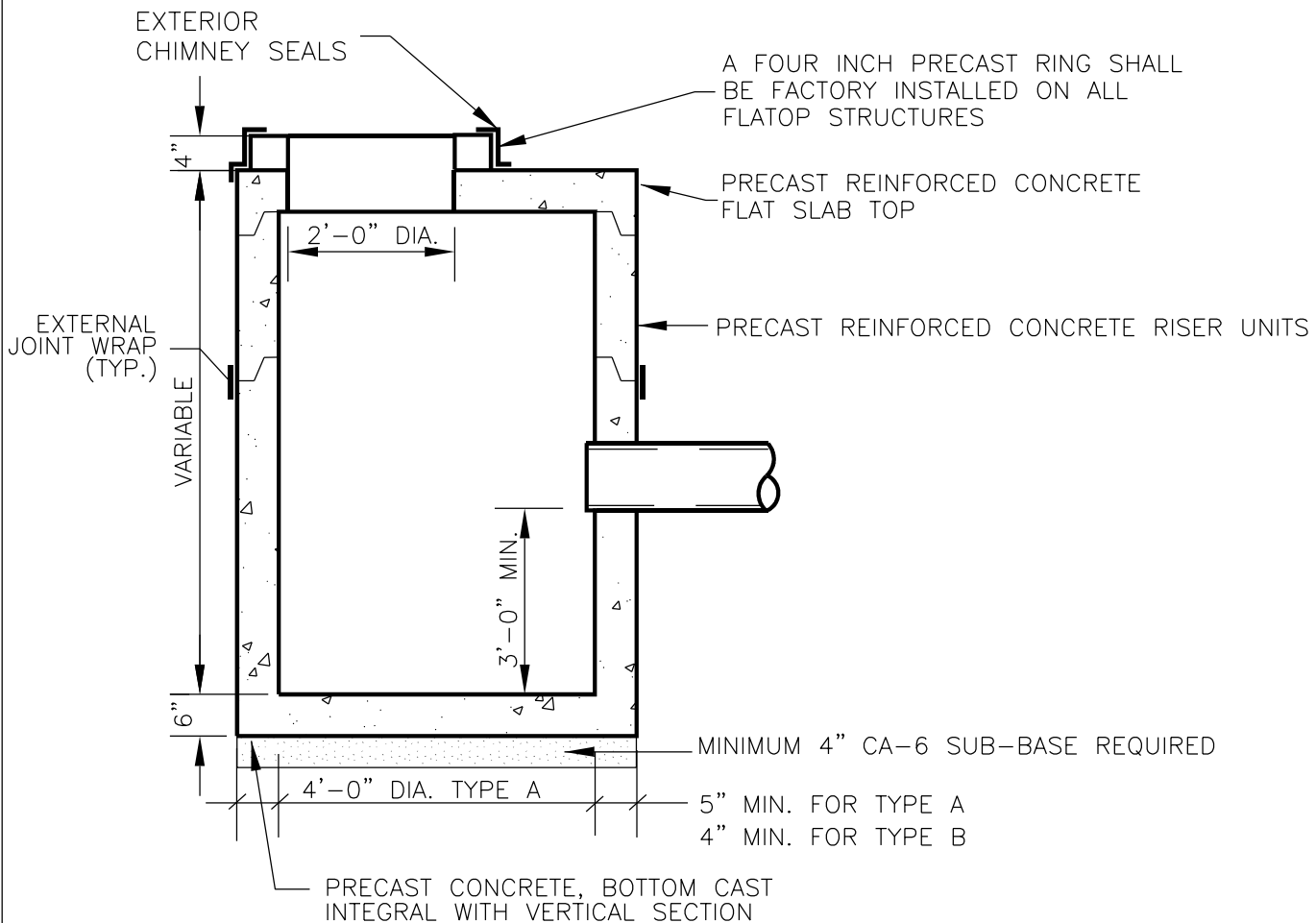
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

NOTES:

1. STRUCTURE SHALL BE PRECAST REINFORCED CONCRETE WITH MINIMUM WALL THICKNESS OF 4".
2. STRUCTURE BOTTOMS SHALL BE PRECAST REINFORCED CONCRETE WITH FIRST VERTICAL SECTION PRECAST INTEGRALLY WITH IT.
3. ALL JOINTS BETWEEN PRECAST ELEMENTS, ADJUSTING RINGS, AND MANHOLE FRAMES SHALL BE SET IN PLACE WITH A BUTYL RUBBER JOINT SEALANT. BARREL SECTIONS SHALL BE SEALED USING EITHER A BUTYL RUBBER JOINT SEALANT OR A RUBBER GASKET. A 9" WIDE POLYETHYLENE EXTERNAL SEAL SHALL BE APPLIED TO ALL STRUCTURE JOINTS.
4. A MAXIMUM OF TWO (2) ADJUSTMENT RINGS FOR A MAXIMUM ADJUSTMENT OF 8" IS ALLOWED. THE TOP ADJUSTMENT RING SHALL BE MADE OF RECYCLED RUBBER WHEN THE STRUCTURE IS INSTALLED IN A PAVED VEHICLE TRAFFIC AREA.
5. EXTERNAL CHIMNEY SEALS SHALL BE INSTALLED WHICH SHALL CAPTURE AT LEAST 4" OF THE STRUCTURE FRAME, ALL OF THE ADJUSTING RINGS, AND 4" OF THE UPPER CONE SECTION EXCEPT FOR CATCH BASINS IN YARD AREAS USING TYPE 8 FRAMES.
6. MANUFACTURER AND MODEL NUMBER FOR FRAMES AND GRATES SHALL BE AS SPECIFIED **IN THE CITY OF GENOA** APPROVED PRODUCTS LIST.
7. PIPE CONNECTIONS SHALL BE MADE WITH THE USE OF PRECAST OPENINGS. CONNECTIONS TO EXISTING STRUCTURES SHALL BE MADE WITH THE USE OF MACHINE-CORED OPENINGS. THE INTERNAL AND EXTERNAL PIPE PENETRATIONS SHALL BE TUCKPOINTED.



CATCH BASIN TYPES A & B

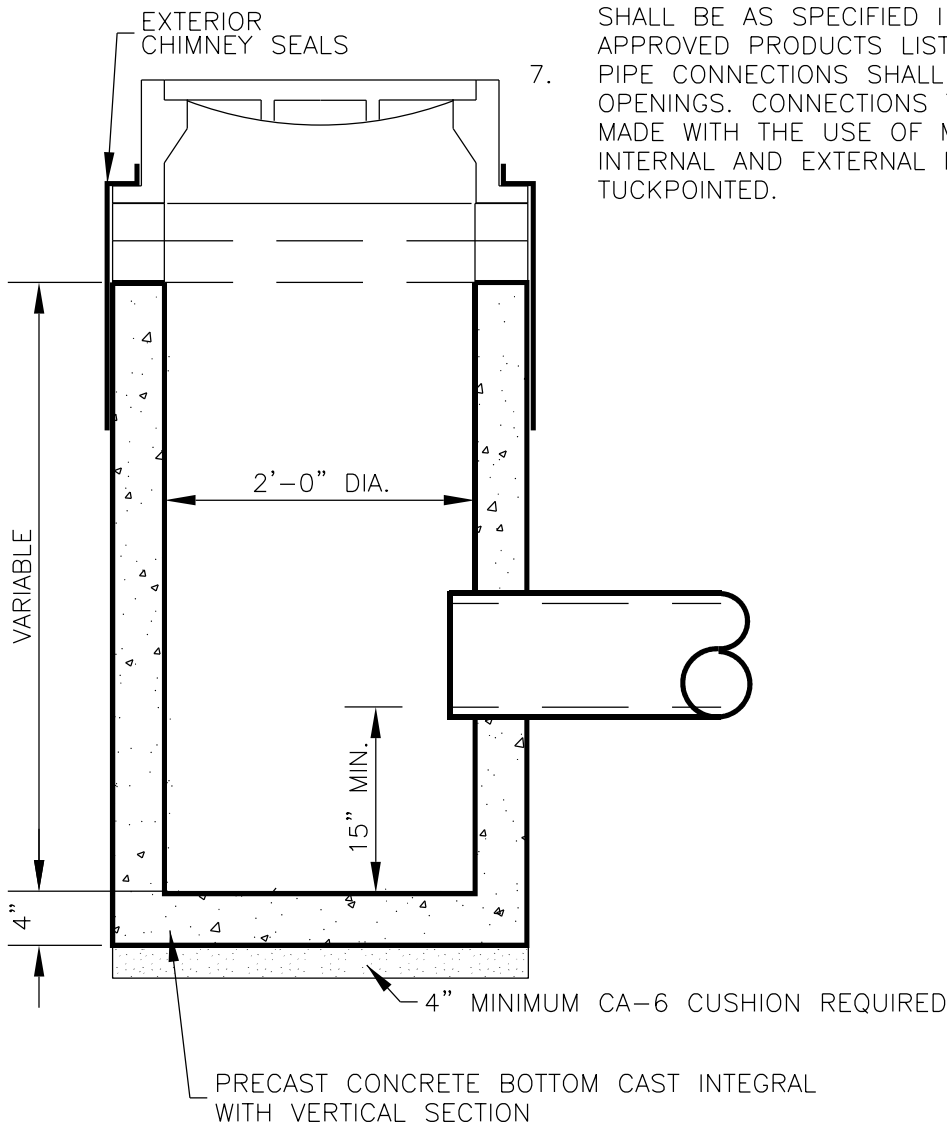
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

NOTES:

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5. EXTERNAL CHIMNEY SEALS SHALL BE INSTALLED WHICH SHALL CAPTURE AT LEAST 4" OF THE STRUCTURE FRAME, ALL OF THE ADJUSTING RINGS, AND 4" OF THE UPPER CONE SECTION EXCEPT FOR CATCH BASINS IN YARD AREAS USING TYPE 8 FRAMES.
6. MANUFACTURER AND MODEL NUMBER FOR FRAMES AND GRATES SHALL BE AS SPECIFIED IN THE **CITY OF GENOA** APPROVED PRODUCTS LIST.
7. PIPE CONNECTIONS SHALL BE MADE WITH THE USE OF PRECAST OPENINGS. CONNECTIONS TO EXISTING STRUCTURES SHALL BE MADE WITH THE USE OF MACHINE-CORED OPENINGS. THE INTERNAL AND EXTERNAL PIPE PENETRATIONS SHALL BE TUCKPOINTED.

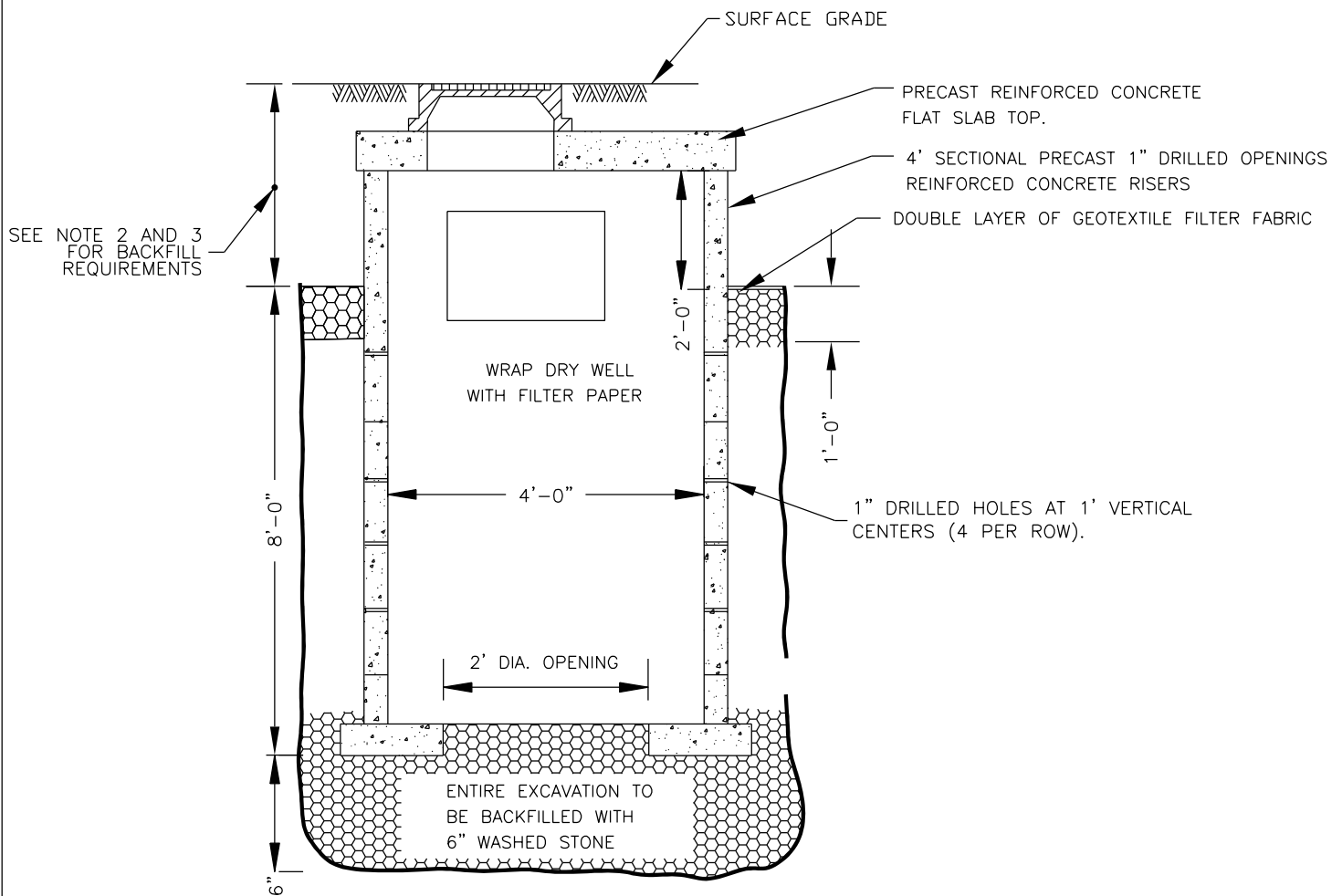


SPECIAL USE ONLY
CATCH BASIN TYPE C

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

1. DRYWELL STRUCTURE SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE 'CITY OF GENOA' STANDARD DETAIL FOR A STORM MANHOLE. SEE CITY OF GENOA APPROVED PRODUCT LIST FOR MANUFACTURER AND MODEL NUMBERS.
2. WHEN A DRYWELL IS CONSTRUCTED WITHIN A TURF AREA, THAT PORTION EXCAVATED ABOVE THE GEOTEXTILE FILTER FABRIC SHALL BE BACKFILLED WITH SELECT MATERIAL AND THE FINAL SIX (6) INCHES, MINIMUM, WITH TOPSOIL IN CONFORMANCE WITH CITY RESTORATION STANDARDS.
3. WHEN DRYWELL IS LOCATED WITHIN A PAVEMENT AREA, THAT PORTION EXCAVATED ABOVE THE GEOTEXTILE FILTER FABRIC SHALL BE BACKFILLED WITH IDOT CA-6 AGGREGATE BASE COURSE TYPE B TO THE BOTTOM OF THE PAVEMENT SUB-BASE ELEVATION.
4. DRY WELL CONSTRUCTION SHALL BE ALLOWED IN ONLY IN SPECIAL CASES, SERVING LIMITED AREAS, AND ONLY WHEN SOIL BORINGS INDICATE THAT EXISTING GROUND WILL SUPPORT THEIR USE. THE USE OF DRYWELLS REQUIRES THE WRITTEN APPROVAL of the CITY.

SPECIAL USE ONLY

DRYWELL MANHOLE

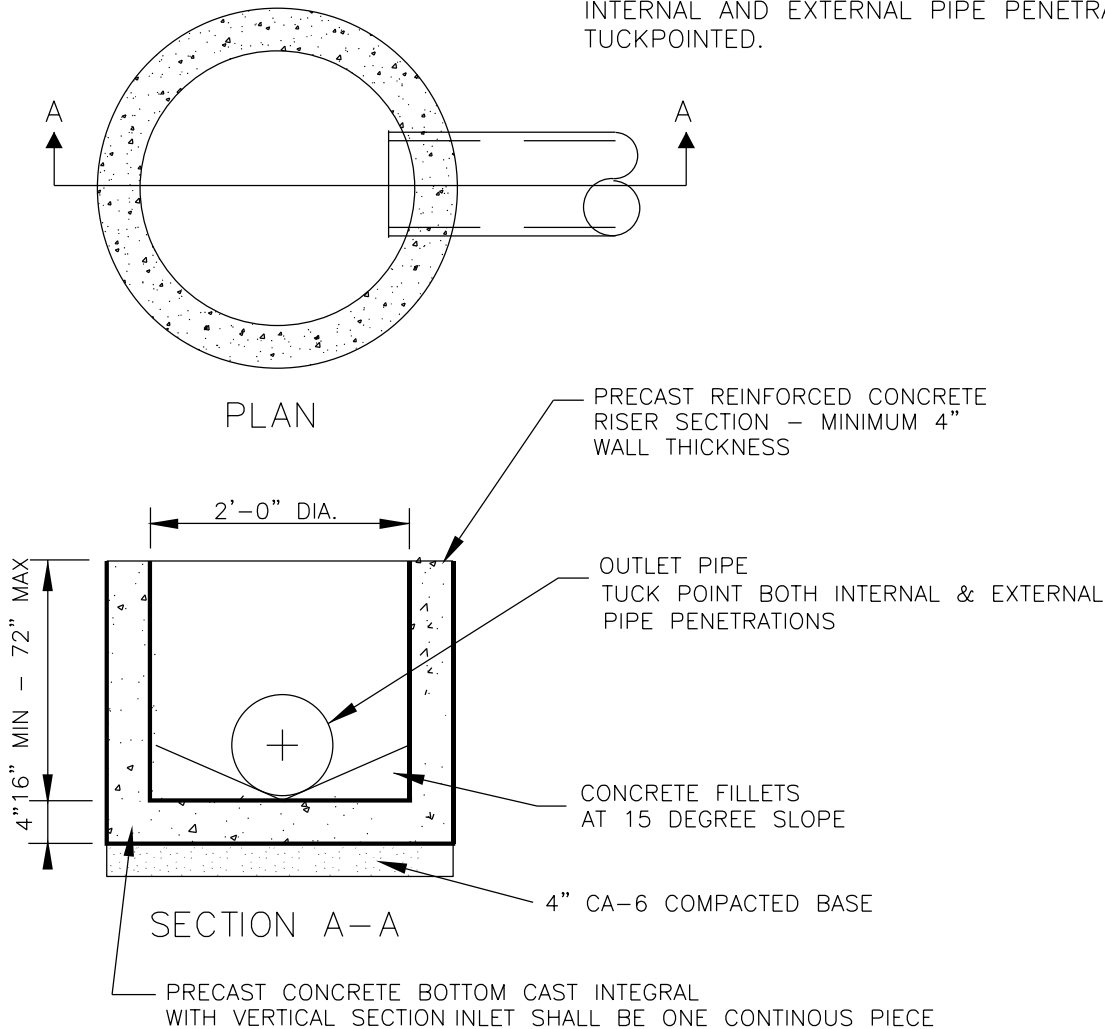
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

NOTES:

1. STRUCTURE SHALL BE PRECAST REINFORCED CONCRETE WITH MINIMUM WALL THICKNESS OF 4".
2. STRUCTURE BOTTOMS SHALL BE PRECAST REINFORCED CONCRETE WITH FIRST VERTICAL SECTION PRECAST INTEGRALLY WITH IT.
3. ALL JOINTS BETWEEN PRECAST ELEMENTS, ADJUSTING RINGS, AND MANHOLE FRAMES SHALL BE SET IN PLACE WITH A BUTYL RUBBER JOINT SEALANT. BARREL SECTIONS SHALL BE SEALED USING EITHER A BUTYL RUBBER JOINT SEALANT OR A RUBBER GASKET. A 9" WIDE POLYETHYLENE EXTERNAL SEAL SHALL BE APPLIED TO ALL STRUCTURE JOINTS.
4. A MAXIMUM OF TWO (2) ADJUSTMENT RINGS FOR A MAXIMUM ADJUSTMENT OF 8" IS ALLOWED. THE TOP ADJUSTMENT RING SHALL BE MADE OF RECYCLED RUBBER WHEN THE STRUCTURE IS INSTALLED IN A PAVED VEHICLE TRAFFIC AREA.
5. EXTERNAL CHIMNEY SEALS SHALL BE INSTALLED WHICH SHALL CAPTURE AT LEAST 4" OF THE STRUCTURE FRAME, ALL OF THE ADJUSTING RINGS, AND 4" OF THE UPPER CONE SECTION EXCEPT FOR INLETS IN YARD AREAS USING TYPE 8 FRAMES.
6. MANUFACTURER AND MODEL NUMBER FOR FRAMES AND GRATES SHALL BE AS SPECIFIED IN THE **CITY OF GENOA** APPROVED PRODUCTS LIST.
7. PIPE CONNECTIONS SHALL BE MADE WITH THE USE OF PRECAST OPENINGS. CONNECTIONS TO EXISTING STRUCTURES SHALL BE MADE WITH THE USE OF MACHINE-CORED OPENINGS. THE INTERNAL AND EXTERNAL PIPE PENETRATIONS SHALL BE TUCKPOINTED.

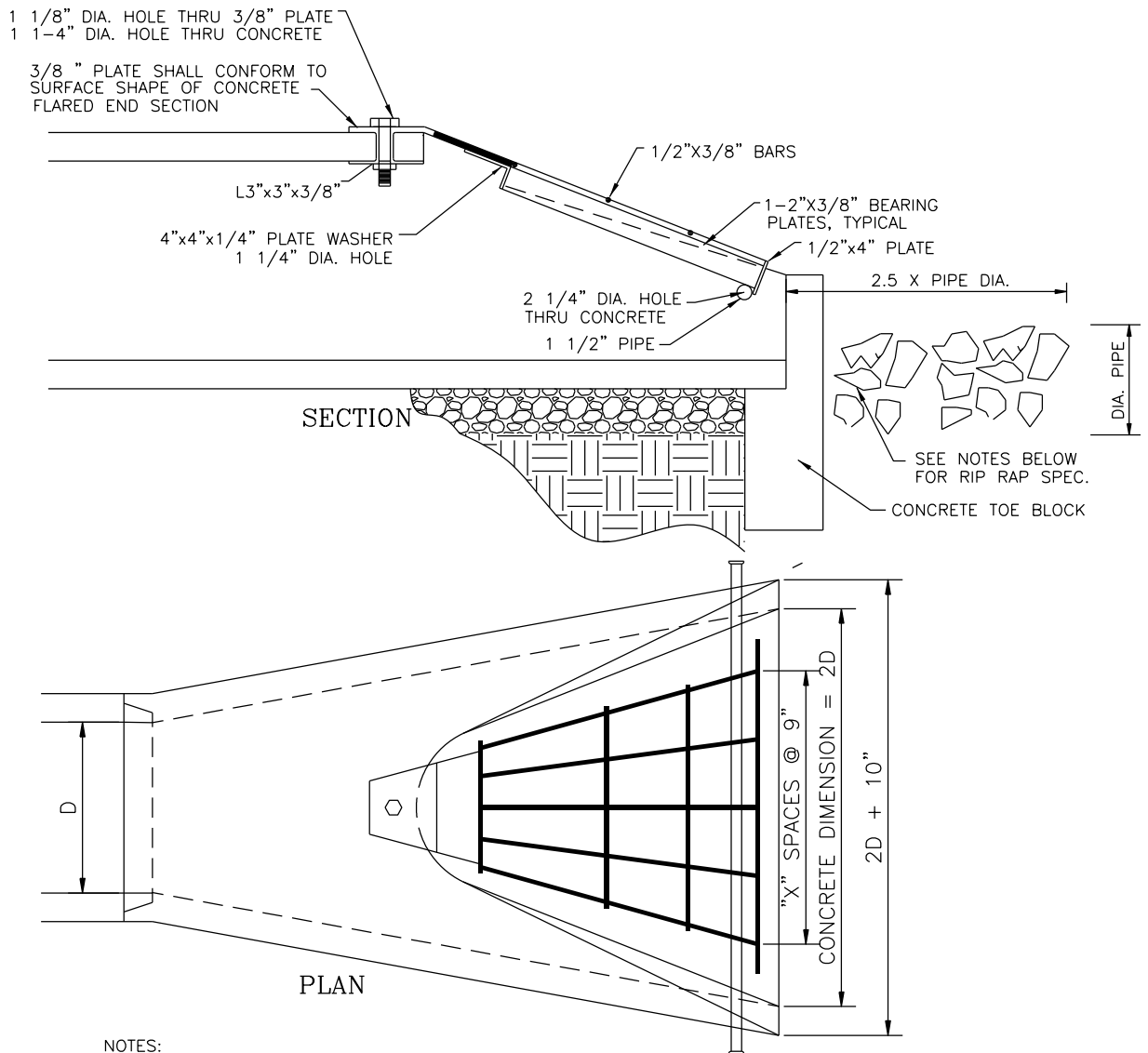


INLET TYPE A

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

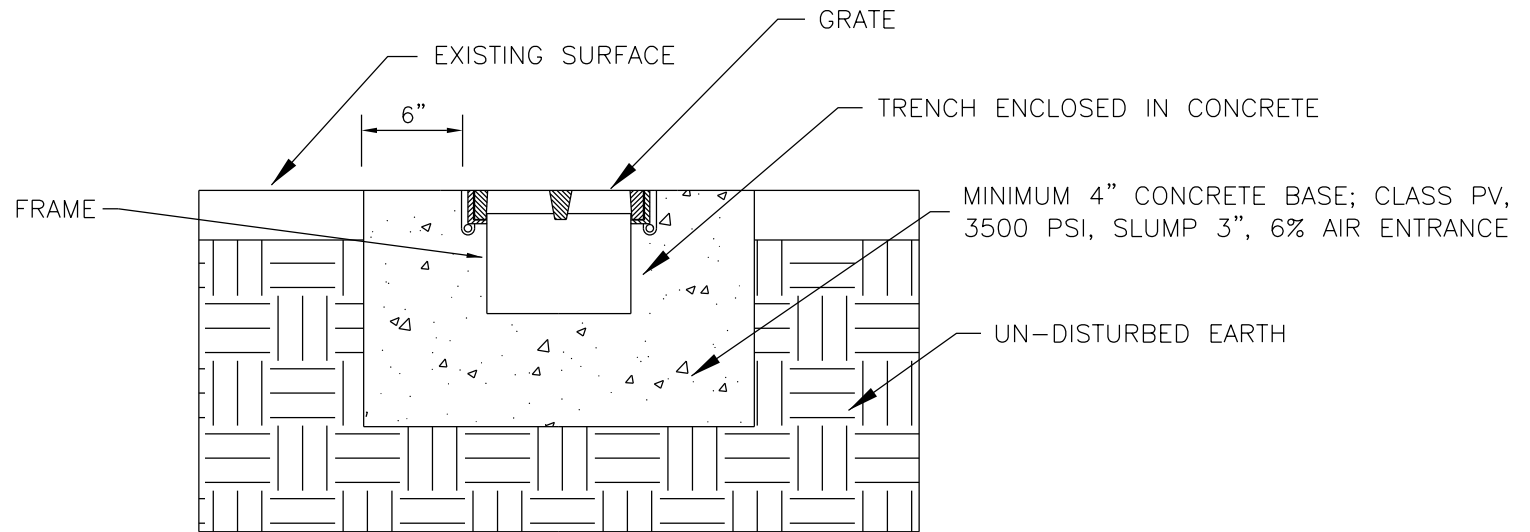
1. GRATINGS SHALL BE REQUIRED FOR ALL FLARED END SECTIONS, LARGER THAN 12 INCHES, EXCEPT WHEN INSTALLED AS PART OF A DRIVEWAY CULVERT.
2. RIP RAP SHALL BE CLASS A LIMESTONE RR-4 (12") STONE. NO BROKEN CONCRETE SHALL BE USED.
3. LENGTH OF RIP RAP SHALL EXTEND 2.5 x DIA. BEYOND TOE OF FLARED END SECTION
4. WIDTH OF APRON SHALL BE 1.5 TIMES THE DIA. OF PIPE. MINIMUM OF 1' WIDER THAN F.E.S.
5. WHERE FLARED END IS USED AS INTAKE, APRON SHALL BE 5' LONG AND 5' WIDE AT F.E.S.
6. SEE APPROVED CITY OF GENOA PRODUCTS LIST FOR MANUFACTURER AND MODEL NUMBERS.

FLARED END SECTION

City of Genoa

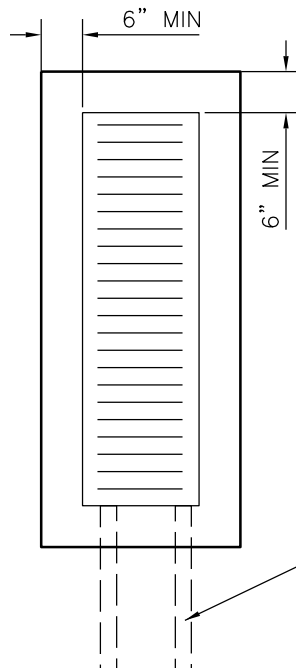
Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



SECTION

PLAN



NOTE:

1. TO BE USED ONLY WITH APPROVAL OF PUBLIC WORKS DIRECTOR

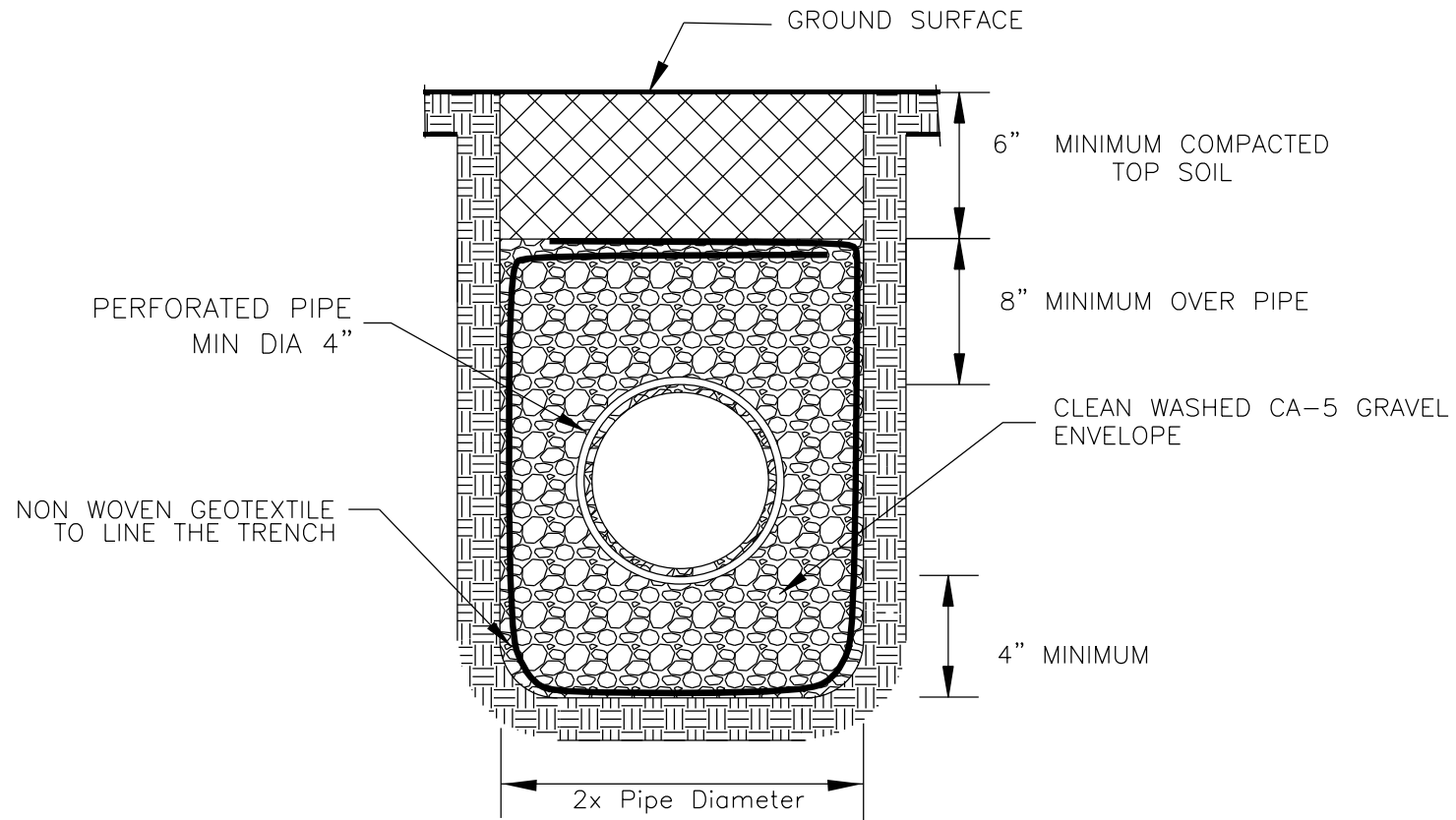
SPECIAL USE ONLY

LINEAR DRIVEWAY DRAIN

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTE:

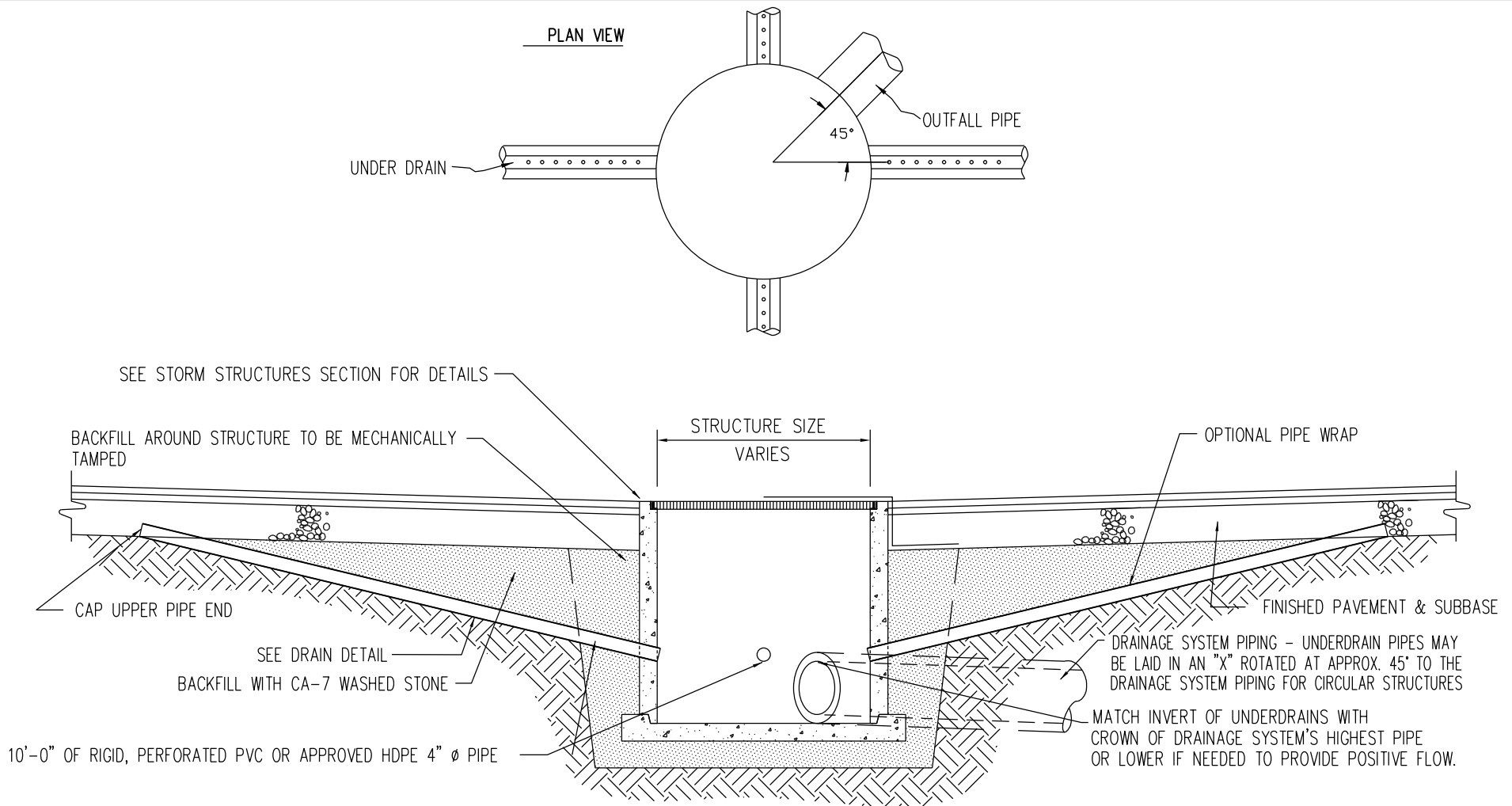
1. SEE CITY OF GENOA FOR APPROVAL OF PRODUCTS.

DRAIN TILE

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTE:

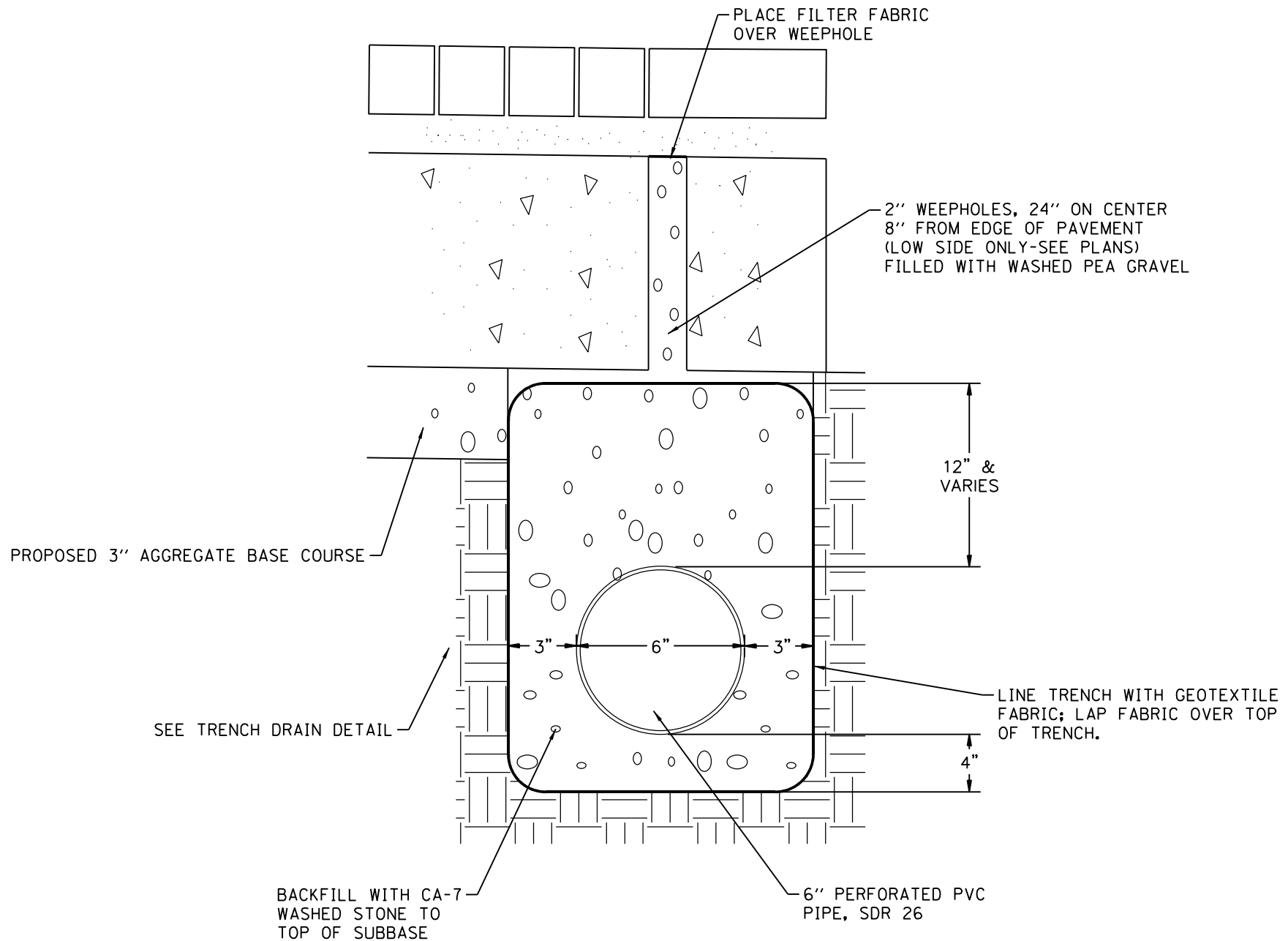
1. SEE APPROVED CITY OF GENOA PRODUCTS LIST FOR MANUFACTURER AND MODEL NUMBERS.

STORM STRUCTURE UNDERDRAIN

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTE:

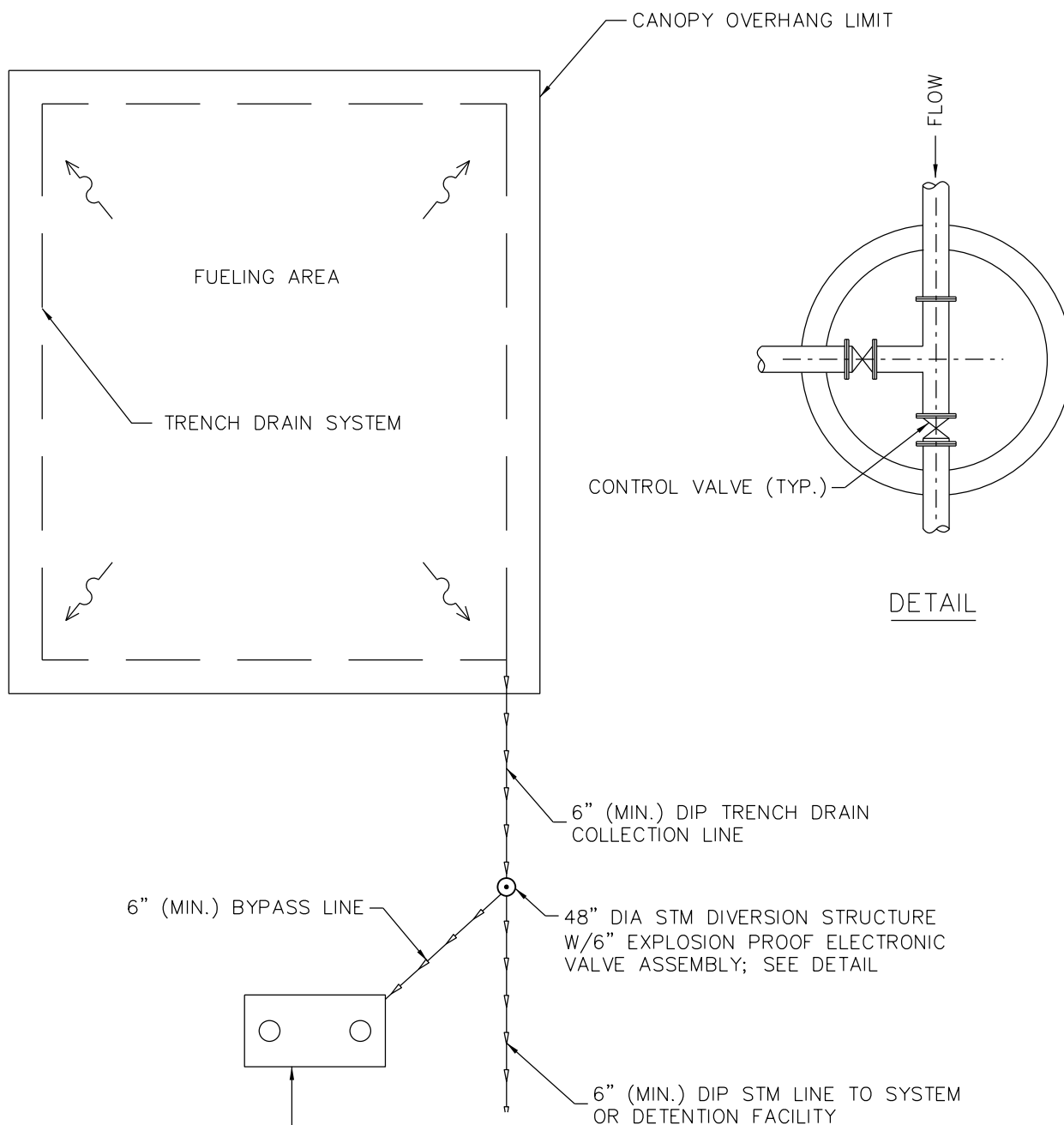
1. PRIOR TO PLACING BEDDING COURSE, CONTRACTOR SHALL TEST THE WEEPOLES FOR FLOW IN AN APPROVED MANNER IN THE PRESENCE OF THE ENGINEER

RIGID BASE DRAINAGE

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

1. CONTROL VALVES SHALL BE ELECTRICALLY ACTIVATED, 120V POWER, NEMA 4 RATING FOR ON-OFF SERVICE WITH MANUAL OVERRIDE.
2. DIAMETER OF VALVES SHALL MATCH INFLOW AND OUTFLOW PIPING.
3. ALL STRUCTURE AND PIPE MATERIALS TO BE CONCRETE OR DIP; NO HDPE OR PVC STRUCTURES OR PIPES ALLOWED.
4. DIVERSION STRUCTURE SHALL BE CONSTRUCTED AS PER STANDARD DETAIL FOR SANITARY MANHOLE.
5. ALL PIPE GASKETS TO BE SOLVENT RESISTANT.
6. SEE **CITY OF GENOA APPROVED PRODUCTS FOR MANUFACTURER AND MODEL NUMBERS.**

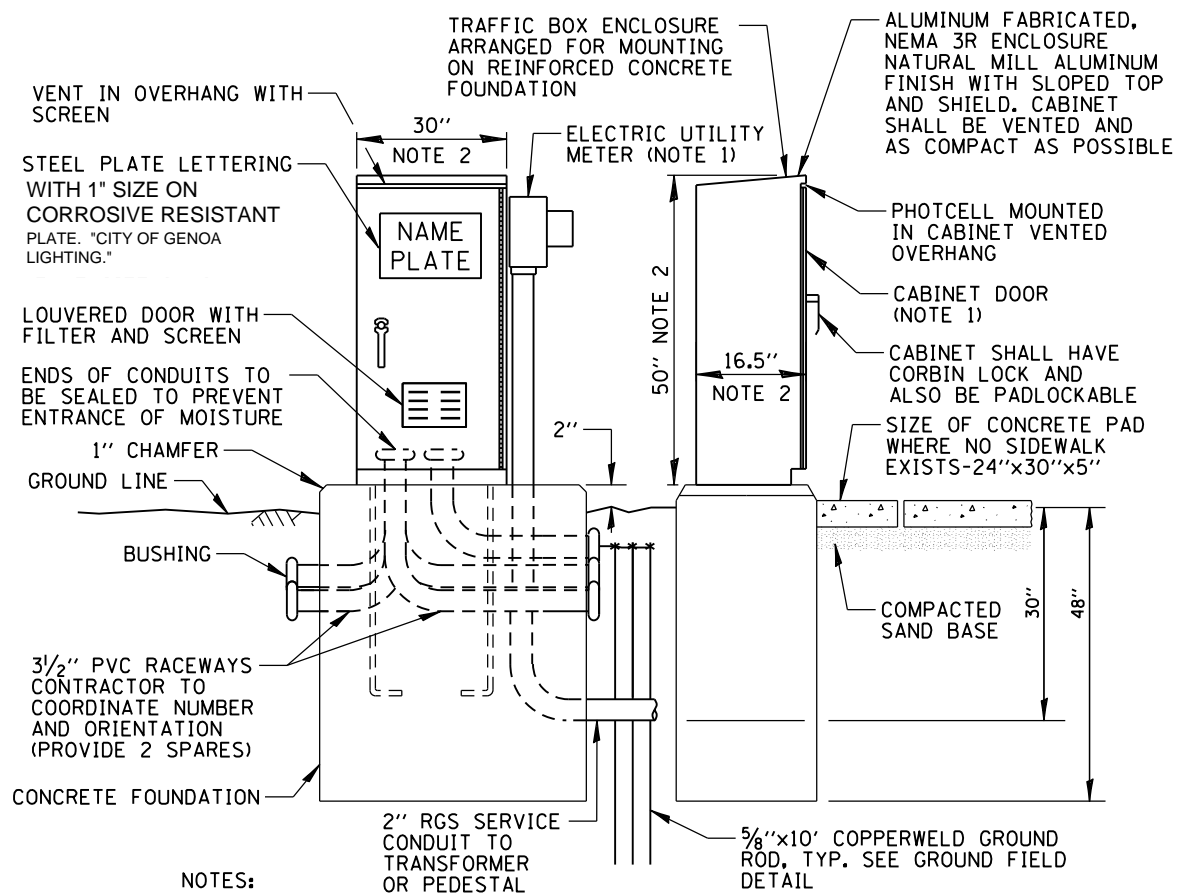
1000 GALLON SPILL COLLECTION
TANK W/LOCKING LIDS

FUEL SPILL COLLECTION

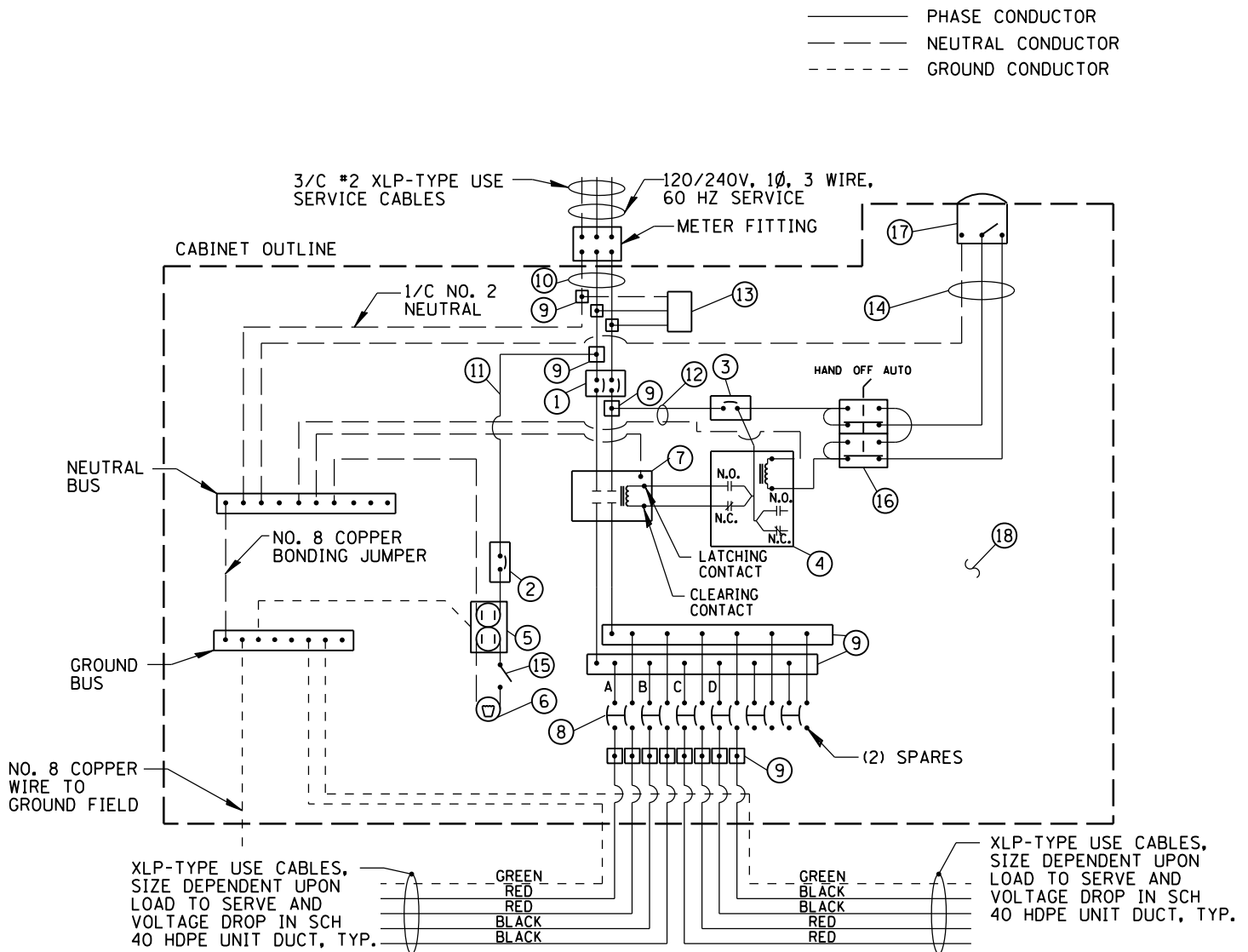
City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



STANDARD DETAIL		
LIGHTING CONTROLLER CABINET & FOUNDATION		
City of Genoa		
Public Works Dept.		Tel. 815-784-2327
100 Madison St.		Fax 815-784-4271
Genoa, Illinois 60135		www.genoa-il.com



STANDARD DETAIL

City of Genoa

Public Works Dept.
 100 Madison St.
 Genoa, Illinois 60135

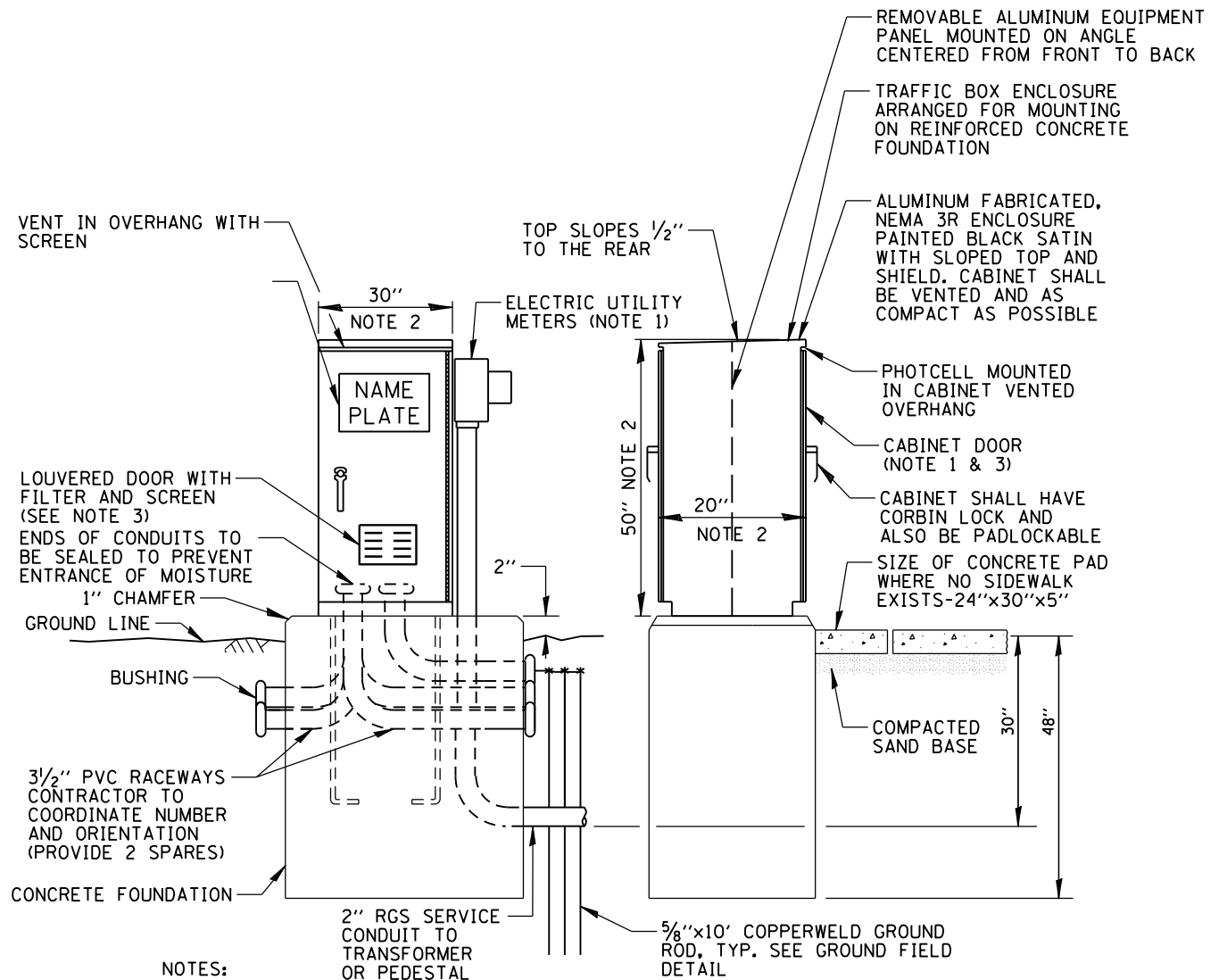
Tel. 815-784-2327
 Fax 815-784-4271
 www.genoa-il.com

ITEM	SPECIFICATION	MFG./MODEL NO. OR APPROVED EQUAL
① MAIN CIRCUIT BREAKER	100 AMPERE, 2P, 240V SERVICE RATING, 10KAIC	SIEMENS NO. ED22B100
② LAMPHOLDER CIRCUIT BREAKER	20 AMPERE, 1P, 120V RATING, 10KAIC	SIEMENS NO. ED21B020
③ PHOTOELECTRIC CONTROL CIRCUIT BREAKER	15 AMPERE, 1P, 120V RATING, 10KAIC	SIEMENS NO. ED21B015
④ AUXILIARY RELAY	120 V OPERATED DPDT 60 HZ COIL 2 NO & 2 NC CONTACTS	MAGNECRAFT NO. 389 FXBXC1 - 120A
⑤ CABINET RECEPTACLE AND BOX	COMMERCIAL GRADE GFCI 20A/120V, MOUNTED IN A WEATHERPROOF CAST ALUMINUM SINGLE GANG BOX WITH WEATHERPROOF COVER	RECEPTACLE: LEVITON NO. 8899, BOX: APPLETON NO. WSM150 COVER: APPLETON NO. WHG1
⑥ CABINET LIGHT AND BOX	120V WEATHERPROOF LAMPHOLDER MOUNTED IN A CAST ALUMINUM BOX & EXT. GRADE 100W LAMP	LIGHT & BOX: RAB NO. VX100DG
⑦ CONTACTOR	100 AMPERE, 2 POLE, 120 V COIL, MECH HELD	SQUARE D NO. 8903 S00 10 V02
⑧ BRANCH LINE CIRCUIT BREAKERS	6 - 20 AMPERE, 2P, 240V RATING, 10KAIC	SIEMENS NO. ED22B020
⑨ POWER DISTRIBUTION BLOCK	600 VOLT, INSULATED, SIZE AS REQUIRED	MARATHON
⑩ SERVICE CABLES	3-600V (XLP-TYPE USE) NO. 2	N/A
⑪ LAMPHOLDER WIRE	2-600V XLP NO. 12	N/A
⑫ CONTROL WIRE	2-600V XLP NO. 12	N/A
⑬ SURGE ARRESTOR	10 K AMPERE RATING	SQUARE D NO. SDSA 1175
⑭ PHOTOELECTRIC CONTROL WIRE	3-600V XLP NO. 12	N/A
⑮ DOOR SWITCH	20A/120V, DOOR MOUNTED SNAP ACTION TYPE PLUNGER SWITCH	OMRON NO. A-20GQ-K
⑯ HAND-AUTO-OFF CONTROL SWITCH	20A, 3 POS. MTD IN CAST ALUM. ENCLOSURE	SQUARE D NO. 9001 KYK 111
⑰ PHOTOCELL	120V, MTD. ON CABINET, DELAY TYPE, SPST-NC	FISHER PIERCE NO. FPFA-105M
⑱ BACK PANEL	1/2" THICK SOLID PHENOLIC LAMINATE	ARBORON

NOTES:

1. ALL ITEMS LISTED IN LIGHTING CONTROLLER COMPONENT SCHEDULE SHALL BE CONSIDERED INCIDENTAL TO THE PRICE BID FOR "LIGHTING CONTROLLER" INCLUDING CABINET AND FOUNDATION.
2. THE LIGHTING CONTROLLER TOGETHER WITH ALL OF ITS COMPONENTS SHALL BE UL LISTED AS AN "ENCLOSED INDUSTRIAL CONTROL PANEL" UNDER UL508A.
3. CONNECTION OF SURGE ARRESTOR TO LINE SIDE OF MAIN CIRCUIT BREAKER SHALL NOT BE "DOUBLE LUGGED."

STANDARD DETAIL	
LIGHTING CONTROLLER COMPONENT SCHEDULE	
City of Genoa	
Public Works Dept. 100 Madison St. Genoa, Illinois 60135	Tel. 815-784-2327 Fax 815-784-4271 www.genoa-il.com



1. SEE DETAIL FOR CABINET METER FITTING & DOOR ORIENTATION.
2. CABINET DIMENSIONS SHOWN ARE APPROXIMATE, CABINET SHALL BE AS COMPACT AS POSSIBLE, CONTRACTOR TO COORDINATE.
3. BOTH FRONT AND REAR DOORS ARE TO BE THE SAME WITH S.S. HANDLES, THREE POINT LATCHING, PADLOCK HASPS, NEOPRENE GASKETS ALL AROUND, CONTINUOUS S.S. HINGES, AND LOUVERS WITH FILTER AND SCREEN.
4. TWO 1/8" ALUMINUM EQUIPMENT PANELS ARE MOUNTED ON 'C' CHANNELS AND CENTERED IN CABINET.
5. FRONT AND REAR DOORS HINGED ON CABINET RIGHT SIDE.

* CITY OF GENOA TO BE ENGRAVED ON NAME PLATE. PLATE TO BE STAINLESS STEEL OR EQUIVALENT

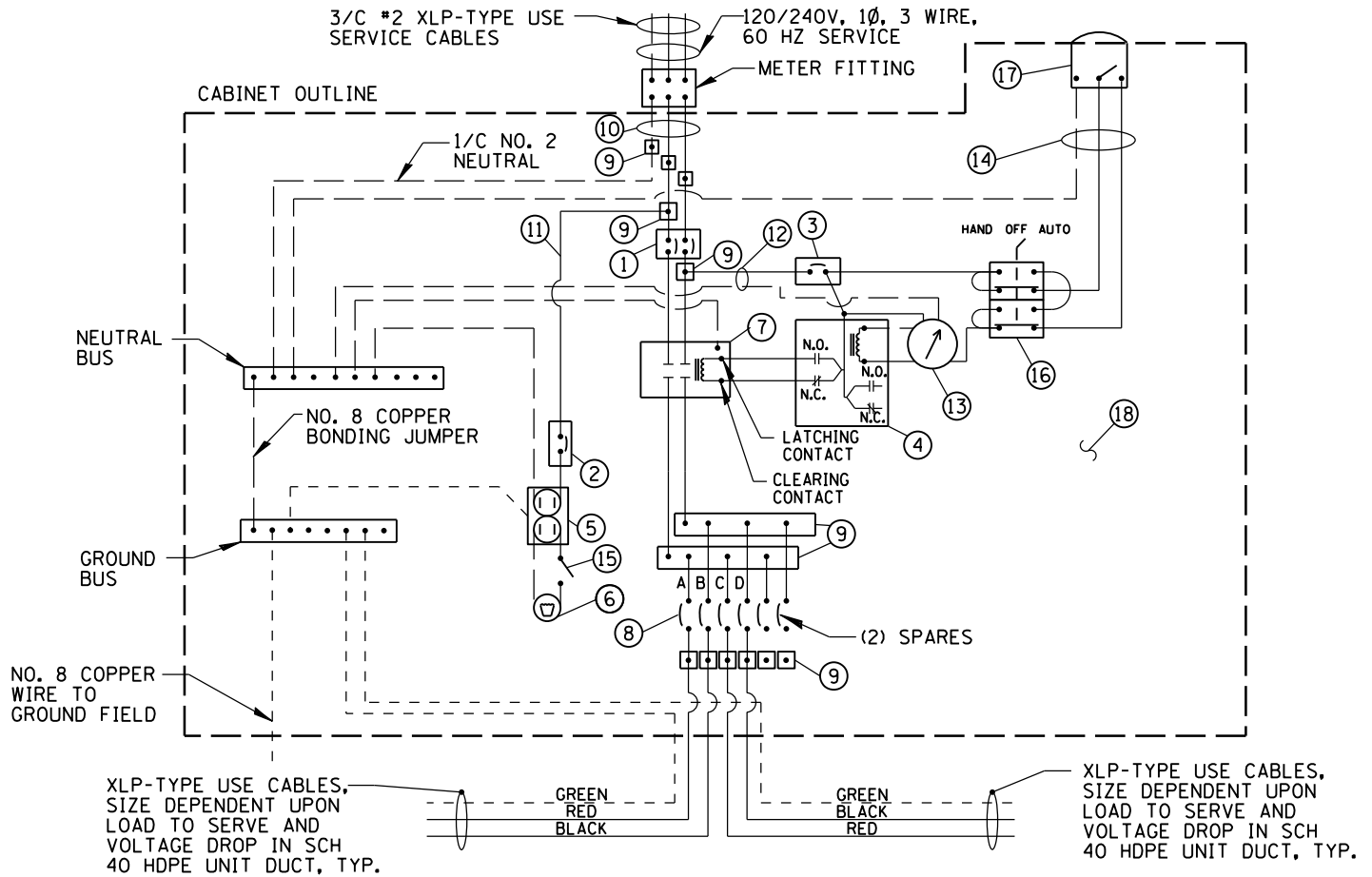
COMBINATION CONTROLLER CABINET & FOUNDATION

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

——— PHASE CONDUCTOR
 - - - NEUTRAL CONDUCTOR
 - - - GROUND CONDUCTOR



RECEPTACLE CONTROLLER WIRING DIAGRAM

City of Genoa

Public Works Dept.
 100 Madison St.
 Genoa, Illinois 60135

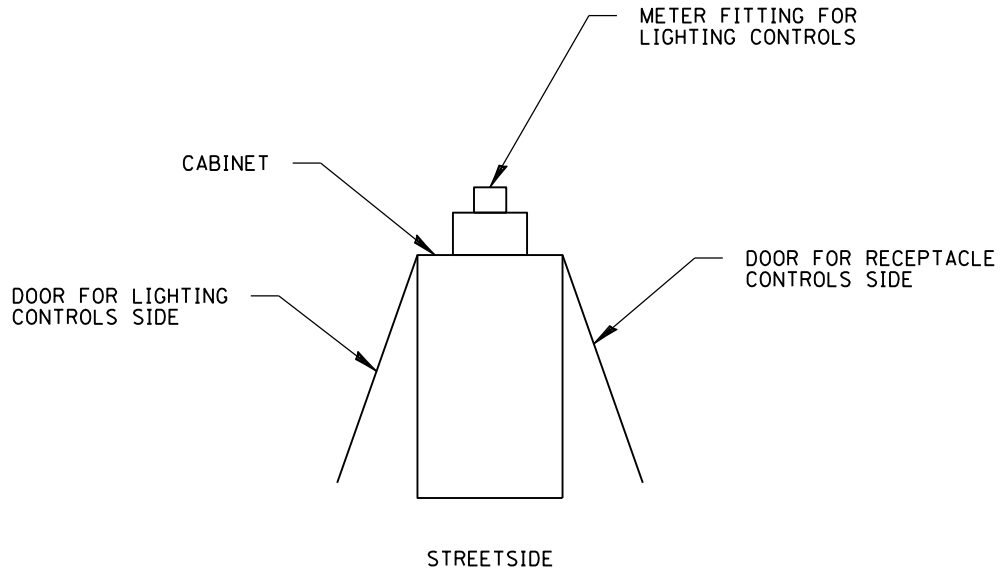
Tel. 815-784-2327
 Fax. 815-784-4271
 www.genoa-il.com

ITEM	SPECIFICATION	MFG./MODEL NO. OR APPROVED EQUAL
① MAIN CIRCUIT BREAKER	100 AMPERE, 2P, 240V SERVICE RATING, 10KAIC	SIEMENS NO. ED22B100
② LAMPHOLDER CIRCUIT BREAKER	20 AMPERE, 1P, 120V RATING, 10KAIC	SIEMENS NO. ED21B020
③ PHOTOELECTRIC CONTROL CIRCUIT BREAKER	15 AMPERE, 1P, 120V RATING, 10KAIC	SIEMENS NO. ED21B015
④ AUXILIARY RELAY	120 V OPERATED DPDT 60 HZ COIL 2 NO & 2 NC CONTACTS	MAGNECRAFT NO. 389 FXBXC1 - 120A
⑤ CABINET RECEPTACLE AND BOX	COMMERCIAL GRADE GFCI 20A/120V, MOUNTED IN A WEATHERPROOF CAST ALUMINUM SINGLE GANG BOX WITH WEATHERPROOF COVER	RECEPTACLE: LEVITON NO. 8899, BOX: APPLETON NO. WSM150 COVER: APPLETON NO. WHG1
⑥ CABINET LIGHT AND BOX	120V WEATHERPROOF LAMPHOLDER MOUNTED IN A CAST ALUMINUM BOX & EXT. GRADE 100W LAMP	LIGHT & BOX: RAB NO. VX100DG
⑦ CONTACTOR	100 AMPERE, 2 POLE, 120 V COIL, MECH HELD	SQUARE D NO. 8903 S00 10 V02
⑧ BRANCH LINE CIRCUIT BREAKERS	50 AMPERE, 1P, 120V RATING, 10KAIC, GFCI	CUTLER/HAMMER NO. EHD1050
⑨ POWER DISTRIBUTION BLOCK	600 VOLT, INSULATED, SIZE AS REQUIRED	MARATHON
⑩ SERVICE CABLES	3-600V (XLP-TYPE USE) NO. 2	N/A
⑪ LAMPHOLDER WIRE	2-600V XLP NO. 12	N/A
⑫ CONTROL WIRE	2-600V XLP NO. 12	N/A
⑬ TIMECLOCK	2-POLE SINGLE THROW, 20 AMPS PER POLE	TORK ASTRONOMIC TIME SWITCH DZS200BP
⑭ PHOTOELECTRIC CONTROL WIRE	3-600V XLP NO. 12	N/A
⑮ DOOR SWITCH	20A/120V, DOOR MOUNTED SNAP ACTION TYPE PLUNGER SWITCH	OMRON NO. A-20G0-K
⑯ HAND-AUTO-OFF CONTROL SWITCH	20A, 3 POS. MTD IN CAST ALUM. ENCLOSURE	SQUARE D NO. 9001 KYK 111
⑰ PHOTOCCELL	120V, MTD. ON CABINET, DELAY TYPE, SPST-NC	FISHER PIERCE NO. FPFA-105M
⑱ BACK PANEL	1/2" THICK SOLID PHENOLIC LAMINATE	ARBORON

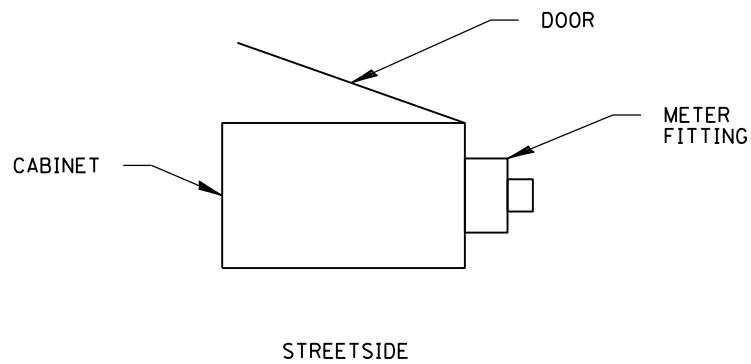
NOTES:

1. ALL ITEMS LISTED IN LIGHTING CONTROLLER COMPONENT SCHEDULE SHALL BE CONSIDERED INCIDENTAL TO THE PRICE BID FOR "LIGHTING CONTROLLER" INCLUDING CABINET AND FOUNDATION.
2. THE LIGHTING CONTROLLER TOGETHER WITH ALL OF ITS COMPONENTS SHALL BE UL LISTED AS AN "ENCLOSED INDUSTRIAL CONTROL PANEL" UNDER UL508A.
3. CONNECTION OF SURGE ARRESTOR TO LINE SIDE OF MAIN CIRCUIT BREAKER SHALL NOT BE "DOUBLE LUGGED."

LIGHTING DETAIL	
RECEPTACLE CONTROLLER COMPONENT SCHEDULE	
City of Genoa	
Public Works Dept. 100 Madison St. Genoa, Illinois 60135	Tel. 815-784-2327 Fax 815-784-4271 www.genoa-il.com



DOUBLE DOOR



SINGLE DOOR

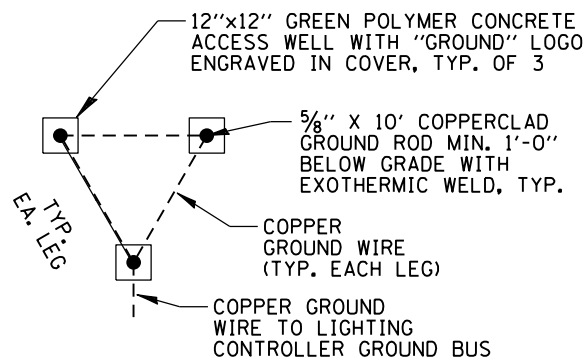
STANDARD DETAIL

CABINET ORIENTATION

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



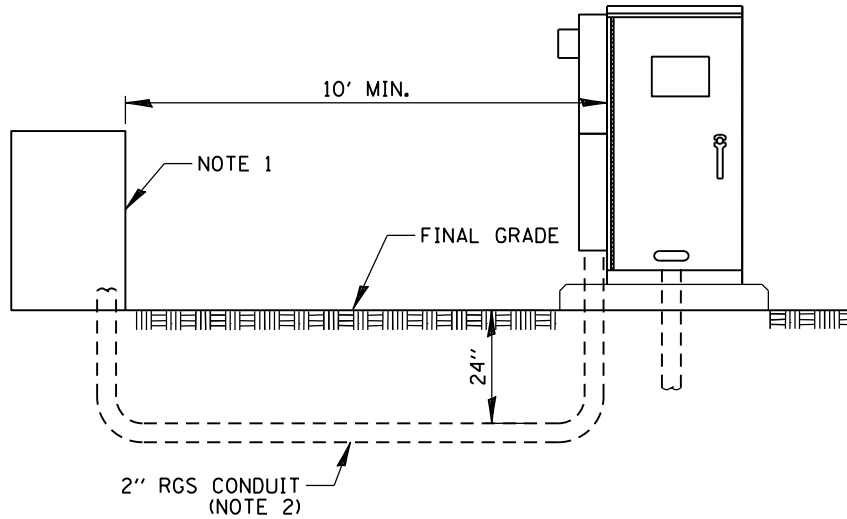
STANDARD DETAIL

GROUND FIELD DETAIL

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

1. ELECTRIC SERVICE PEDESTAL OR TRANSFORMER LOCATED IN EASEMENT. COM ED WILL PROVIDE CONNECTORS FOR CABLES AND CONNECT CABLES WITHIN THE COM ED ENCLOSURE. COM ED WILL IDENTIFY CUSTOMER'S STREET LIGHT CABLE.
2. WIRE SIZE TO MATCH WIRE SIZE CALLED OUT IN LIGHTING CONTROLLER WIRING DIAGRAM.

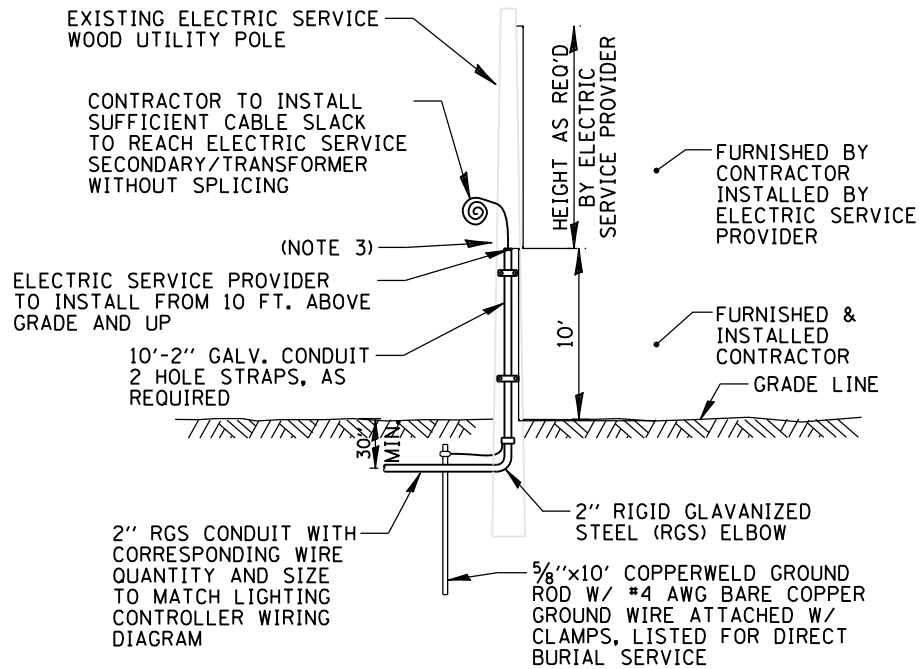
STANDARD DETAIL

UNDERGROUND SERVICE INSTALLATION

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

1. ALL WORK SHALL CONFORM TO ELECTRIC SERVICE PROVIDER'S BOOK OF "INFORMATION AND REQUIREMENTS FOR THE SUPPLY OF ELECTRIC SERVICE."
2. FURNISHING AND INSTALLING ALL MATERIAL SHOWN ABOVE (EXCEPT FOR POLE) SHALL BE INCLUDED IN THE PRICE BID FOR "ELECTRIC SERVICE INSTALLATION". THE HORIZONTAL SERVICE CONDUIT AND WIRING FROM POLE TO CONTROLLER SHALL BE PAID FOR SEPARATELY.
3. CONTRACTOR TO PROVIDE A CONDUIT BUSHING AND SEALING COMPOUND AT TOP OF RISER.

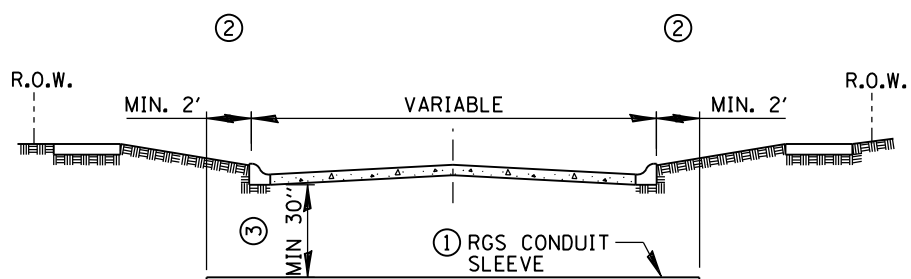
STANDARD DETAIL

OVERHEAD SERVICE INSTALLATION

City of Genoa

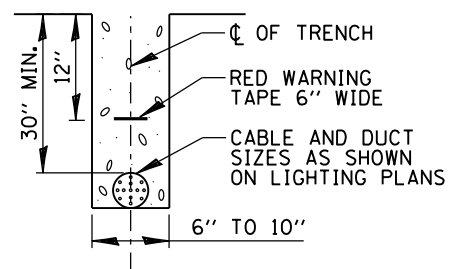
Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

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www.genoa-il.com



ROADWAY CROSSING

- ① SLEEVE SHALL BE HEAVY WALL RIGID GALVANIZED STEEL (RGS) CONDUIT.
- ② SLEEVE SHALL EXTEND A MINIMUM OF 2 FT. BEYOND BACK OF CURB.
- ③ SLEEVE SHALL BE A MINIMUM OF 30" BELOW ROADWAY OR CURB BOTTOM.

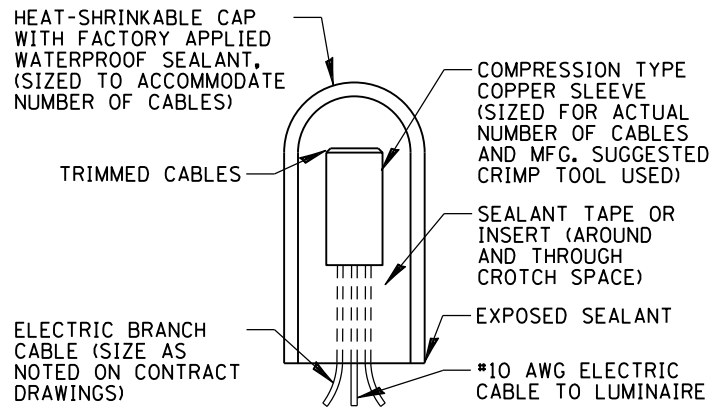


TRENCH CROSS SECTION

CITY OF GENOA

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



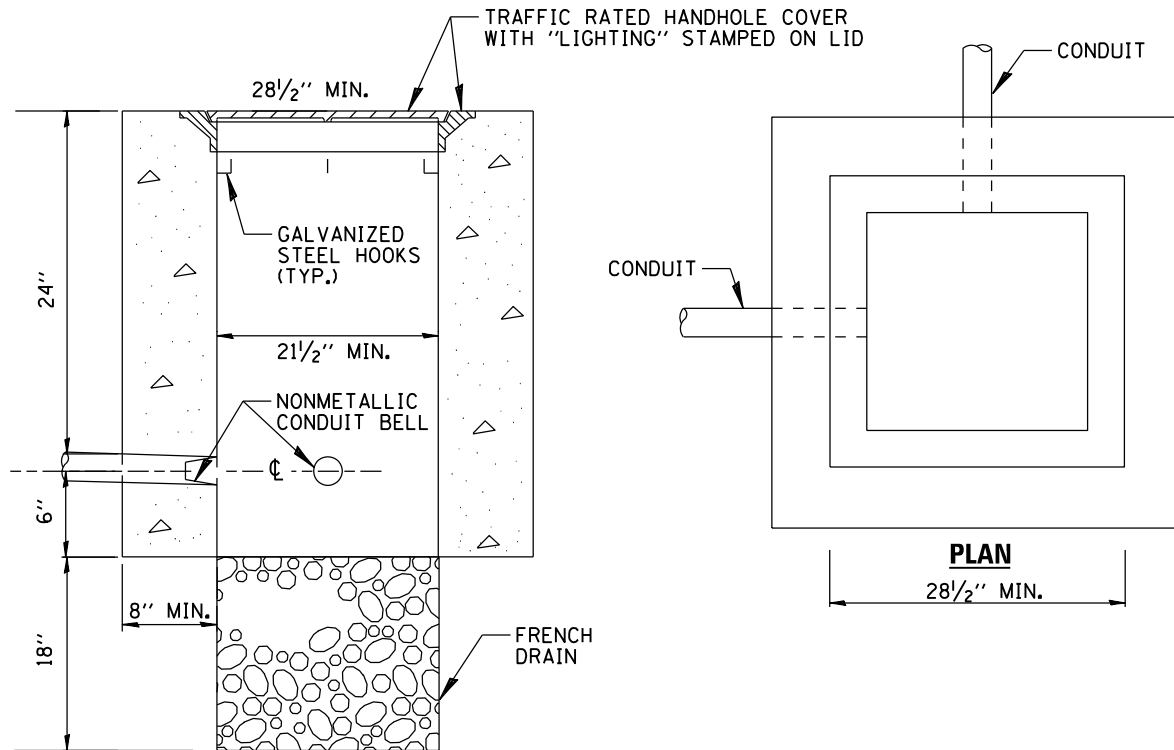
STANDARD DETAIL

ELECTRIC CABLE SPLICE DETAIL

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
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ELEVATION

NOTE:

1. FRAME AND COVER CAN BARE 140 LBS. MIN. LOAD

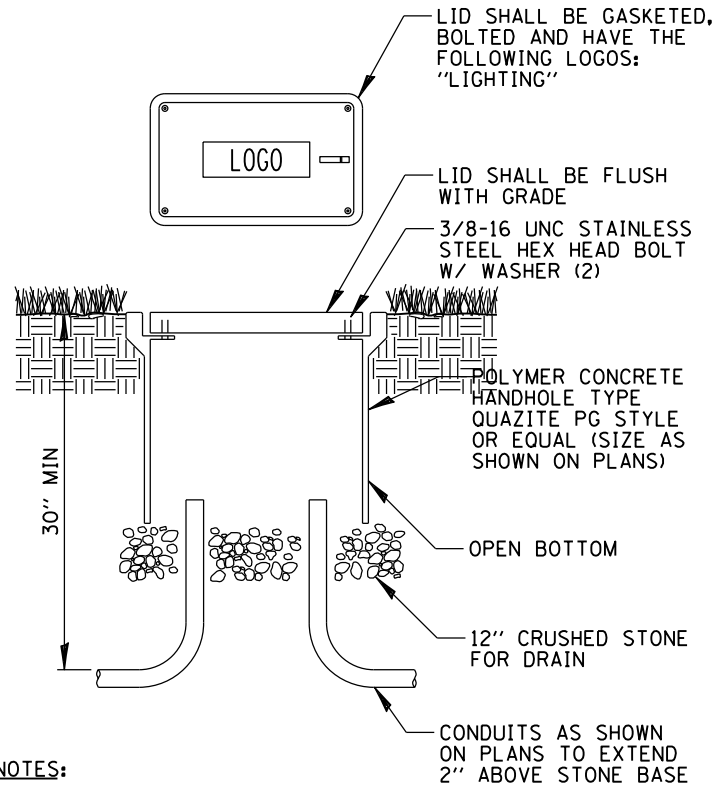
STANDARD DETAIL

CONCRETE HANDHOLE

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

1. ALL SPLICES SHALL BE WATERPROOF. SEE SPLICING DETAIL.
2. POLYMER CONCRETE HANDHOLE AND LID SHALL BE GREY.
3. BOX & LID SHALL MEET/EXCEED ANSI TIER 15 LOADING REQUIREMENTS AND BE TESTED IN ACCORDANCE WITH THE LATEST EDITION OF THE ANSI/SCTE 77 "SPECIFICATIONS FOR UNDERGROUND ENCLOSURE INTEGRITY", AND THE PROVISIONS OF PARAGRAPHS 5.2.3 AND 5.2.4 OF WESTER UNDERGROUND COMMITTEE GUIDE 3.6.

STANDARD DETAIL

JUNCTION BOX DETAIL

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com

NOTES:

1. FINISH: HOT DIP GALVANIZED PER AASHTO M111 (LATEST REVISION).
2. BASEPLATE TO BE PERPENDICULAR TO SHAFT AXIS (± 1 DEG) AND HOLE CENTERLINE CONCENTRIC ($\pm .188$) TO SHAFT AXIS.
3. STENCIL MIN $\frac{1}{2}$ IN. LETTERS MANUFACTURER'S NUMBER AFTER GALVANIZING.
4. PILOT POINT AND SHAFT AXES TO BE CONCENTRIC (± 125 FIM) AND IN LINE (± 2 DEG).
5. FLAME CUT SLOT PERPENDICULAR TO THE BASEPLATE.
6. PREHEAT, TUMBLEBLAST, HANDGRIND, AND CLEAN BASEPLATE, HELIX, AND PILOT POINT ON ALL WELDED AREAS.
7. FLAMECUT IRREGULARITIES PERMISSIBLE: (1) VALLEYS NOT TO EXCEED $\frac{3}{32}$ IN. BELOW NOMINAL SURFACE LEVEL, (2) PEAKS OR POSITIVE IRREGULARITIES NOT TO EXCEED $\frac{1}{32}$ IN. ABOVE NOMINAL SURFACE LEVEL OR INTERSECTIONS OF NOMINAL SURFACES.
8. MANUFACTURER TO HAVE IN EFFECT INDUSTRY RECOGNIZED WRITTEN QUALITY CONTROL FOR ALL MATERIALS AND MANUFACTURING PROCESSES.
9. ALL MATERIAL IS TO BE NEW, UNUSED AND MILL TRACEABLE MEETING THE FOLLOWING SPECIFICATIONS:

BASEPLATE: ASTM A36-(LATEST REVISION) STRUCTURAL (CONFORM TO AASHTO TECH. BUL. #270)

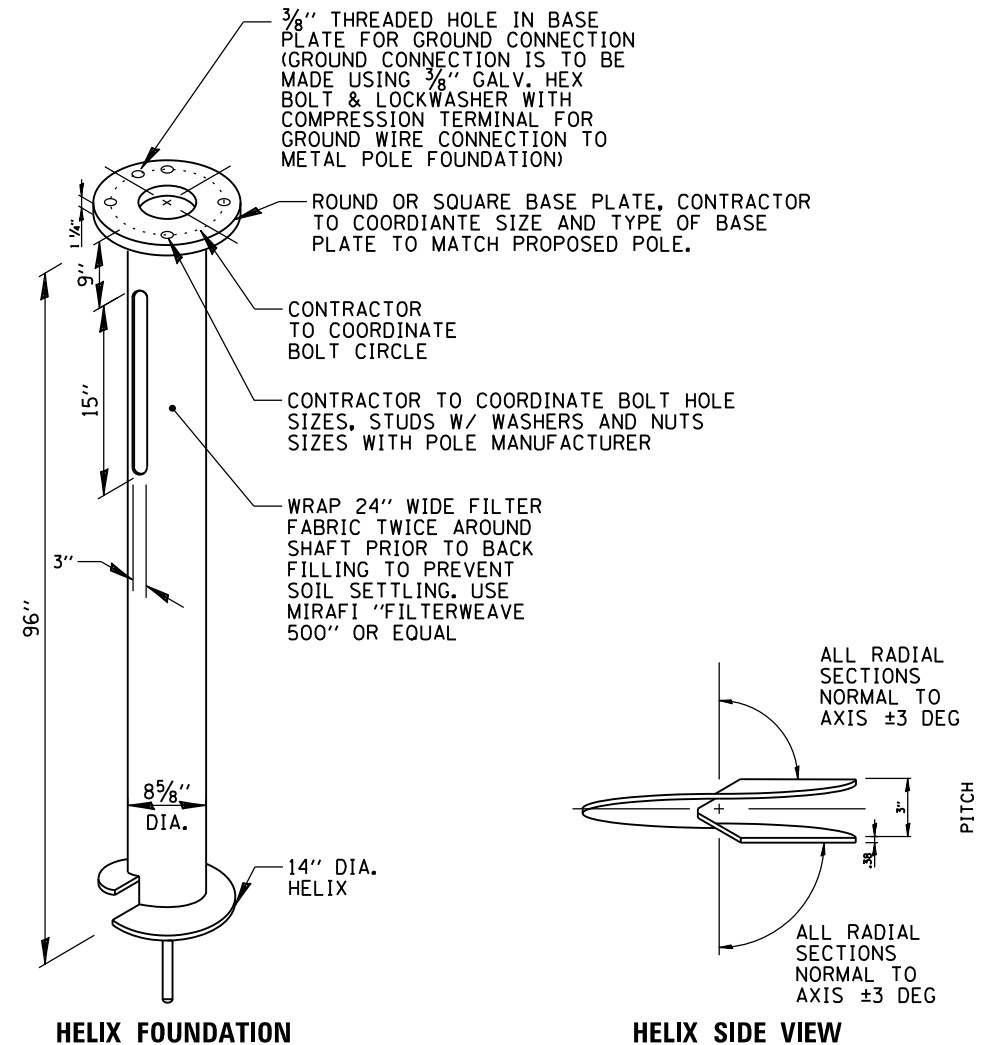
SHAFT: ASTM A252 (LATEST REVISION) GRADE 2, STEEL PIPE PILES. ALT. MATERIAL: ASTM A53 (LATEST REVISION) TYPE E OR S, GRADE B, STEEL PIPE OR ASTM A500 (LATEST REVISION) GRADE B, STRUCTURAL STEEL TUBING.

HELIX: ASTM A635 (LATEST REVISION) $\frac{3}{8}$ " THICK HOT ROLLED STEEL PLATE OR COIL.

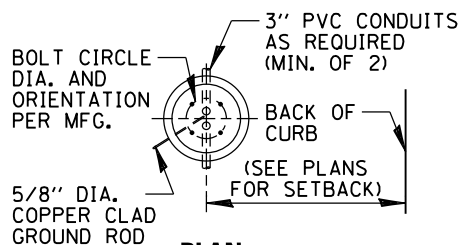
PILOT POINT: ASTM A575 (LATEST REVISION) $1\frac{1}{4}$ " DIA. HOT ROLLED STEEL BAR.

BOLTS: 1" DIA. HOT DIP GALVANIZED STUDS IN ACCORDANCE WITH AASHTO M314 OR ASTM F1554.

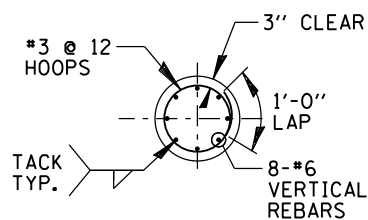
10. BASEPLATE IS PERMANENTLY STAMPED WITH MANUFACTURER'S IDENTIFICATION "ABC" IN $\frac{1}{2}$ " LETTERS AND DATE CODE IN $\frac{1}{4}$ " LETTERS.



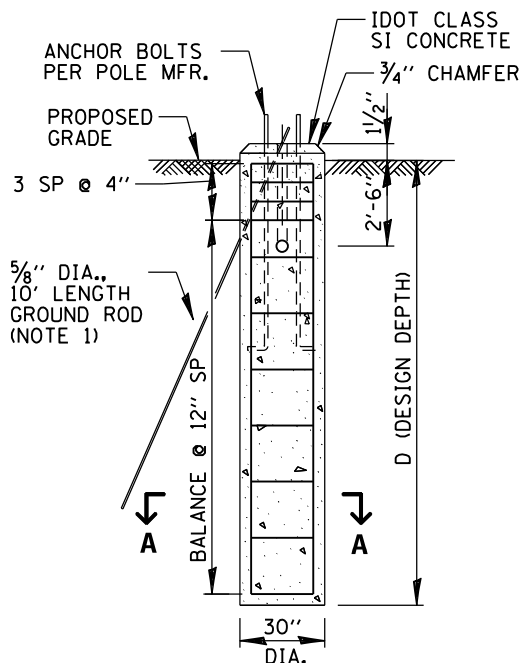
STANDARD DETAIL		
METAL HELIX FOUNDATION		
City of Genoa		
Public Works Dept.		Tel. 815-784-2327
100 Madison St.		Fax 815-784-4271
Genoa, Illinois 60135		www.genoa-il.com



PLAN



SECTION A-A



SOIL CONDITIONS	DESIGN DEPTH "D" OF FOUNDATION
SOFT CLAY ($Q_u=0.375$ TON/SF)	13'-0"
MEDIUM CLAY ($Q_u=0.75$ TON/SF)	9'-6"
STIFF CLAY ($Q_u=1.50$ TON/SF)	7'-0"
LOOSE SAND ($\phi=34^\circ$)	9'-0"
MEDIUM SAND ($\phi=37.5^\circ$)	8'-3"
DENSE SAND ($\phi=40^\circ$)	7'-9"

NOTES:

- GROUND ROD SHALL BE CAST INTO CONCRETE FOUNDATION WITH 8 FEET IN CONTACT WITH SOIL.
- FOUNDATIONS SHALL BE VIBRATED IN ACCORDANCE WITH IDOT STANDARD PRACTICES.

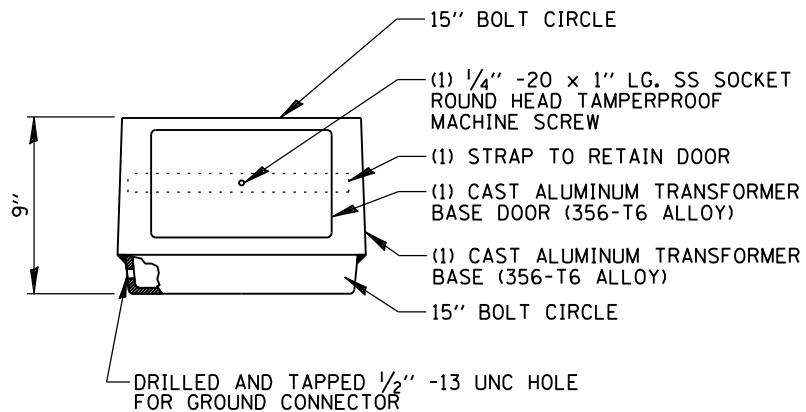
STANDARD DETAIL

CONCRETE FOUNDATION DETAIL

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
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NOTES:

1. BEFORE INSTALLATION OF BREAKAWAY BASE, USER SHOULD CONSULT WITH AUTHORIZED DISTRIBUTOR REGARDING USERS PROPOSED APPLICATION, LOAD REQUIREMENTS AND INSTALLATION METHODS. FAILURES CAN RESULT FROM USERS MISAPPLICATION OR IMPROPER INSTALLATION. TO APPROACH OPTIMUM STATIC LOADS, USE THE LARGEST POSSIBLE BOLT CIRCLES. SHIMS SHALL NOT BE ALLOWED.
2. SHALL BE UNPAINTED UNLESS OTHERWISE DIRECTED AT TIME OF PLAN APPROVAL.

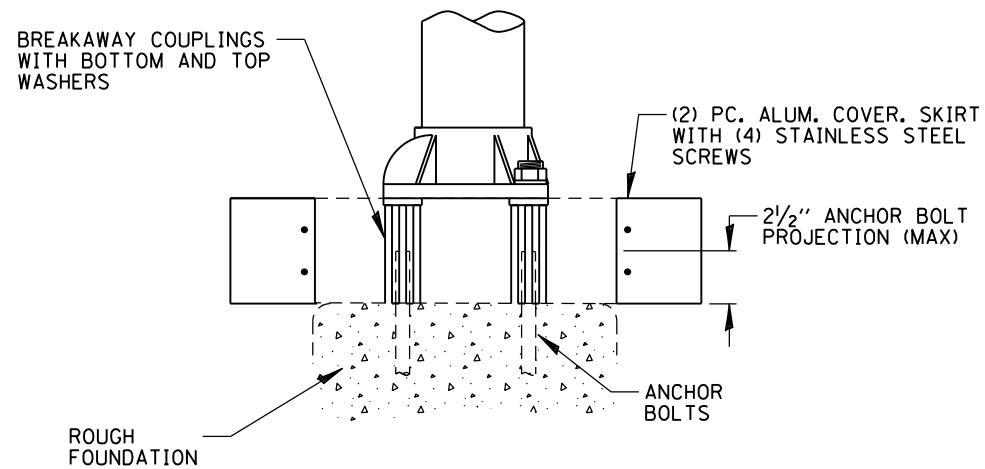
SPECIAL USE DETAIL

TRANSFORMER BASE DETAIL

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



NOTES:

1. SHALL BE LEFT UNPAINTED UNLESS OTHERWISE DIRECTED. FACTORY PAINTING IF REQUIRED AT TIME OF PLAN APPROVAL.

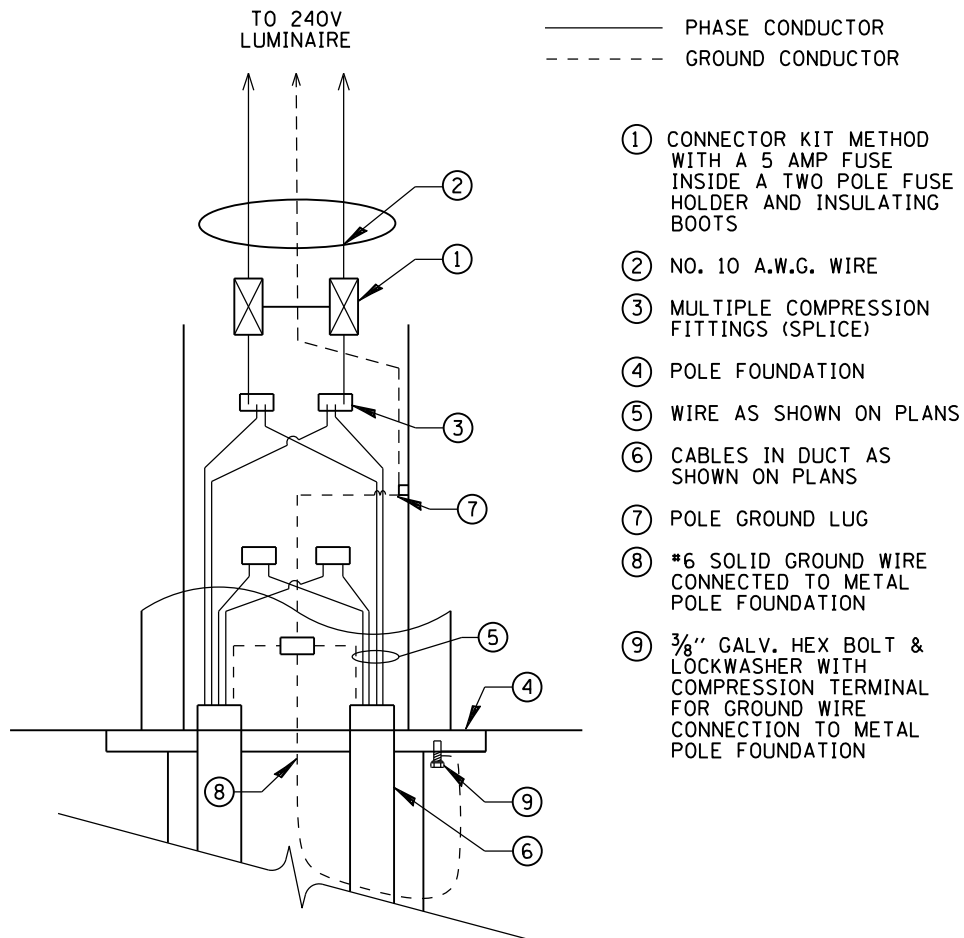
SPECIAL USE DETAIL

BREAKAWAY COUPLING DETAIL

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
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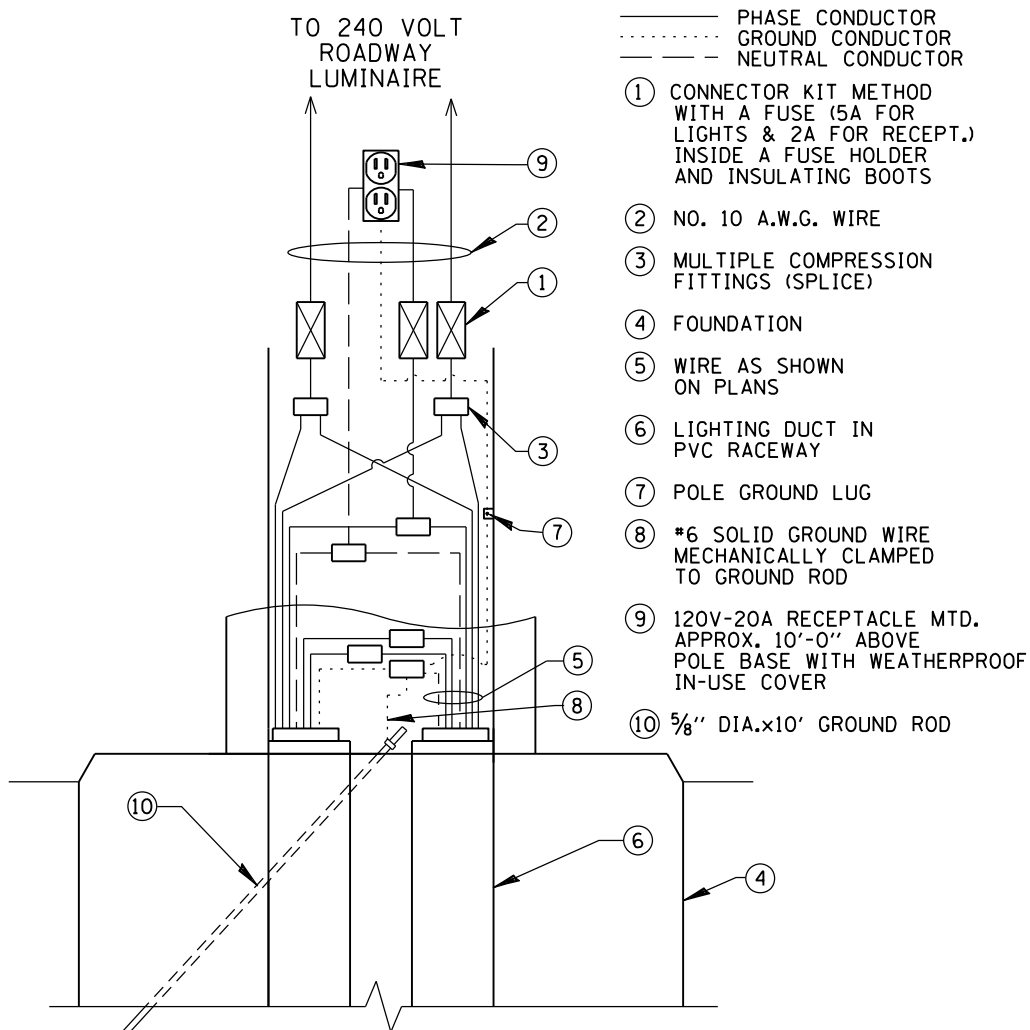
STANDARD DETAIL

HANDHOLE WIRING DIAGRAM

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



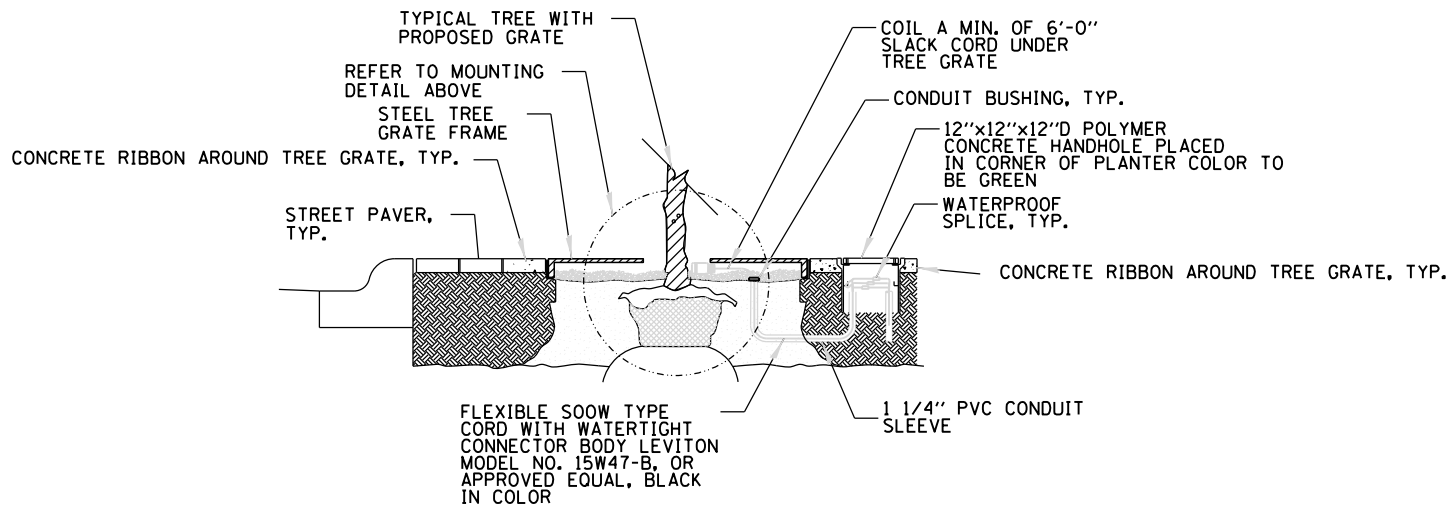
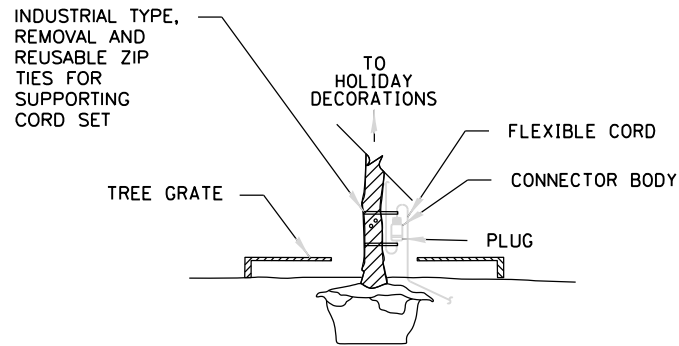
PARK LIGHTING DETAIL

HANDHOLE WIRING DIAGRAM

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

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THE PROPOSED WATERTIGHT CORD CONNECTORS SHOWN SHALL BE USED IN CONJUNCTION WITH ONLY CORRESPONDING LEVITON WATERTIGHT PLUG MODEL NO. 14W47-B, BLACK IN COLOR, RATED IN-USE PER NEC.

PROVIDE A RECEPTACLE IN ALL TREE GRATES.

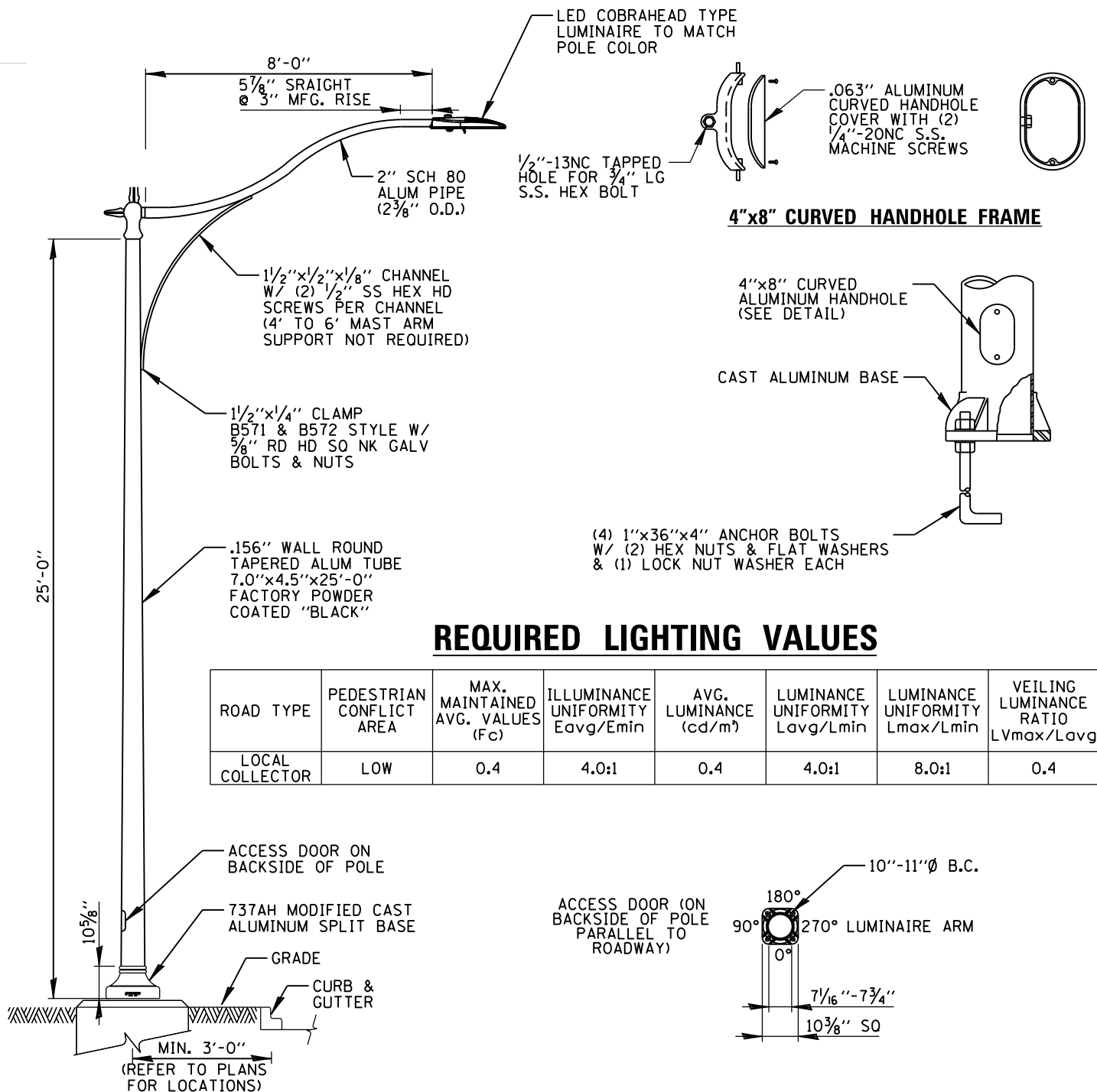
MOUNTING DETAIL FOR IN USE SERVICE

URBAN TREE PLANTING WELL WITH ELECTRICAL OUTLET

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
Fax 815-784-4271
www.genoa-il.com



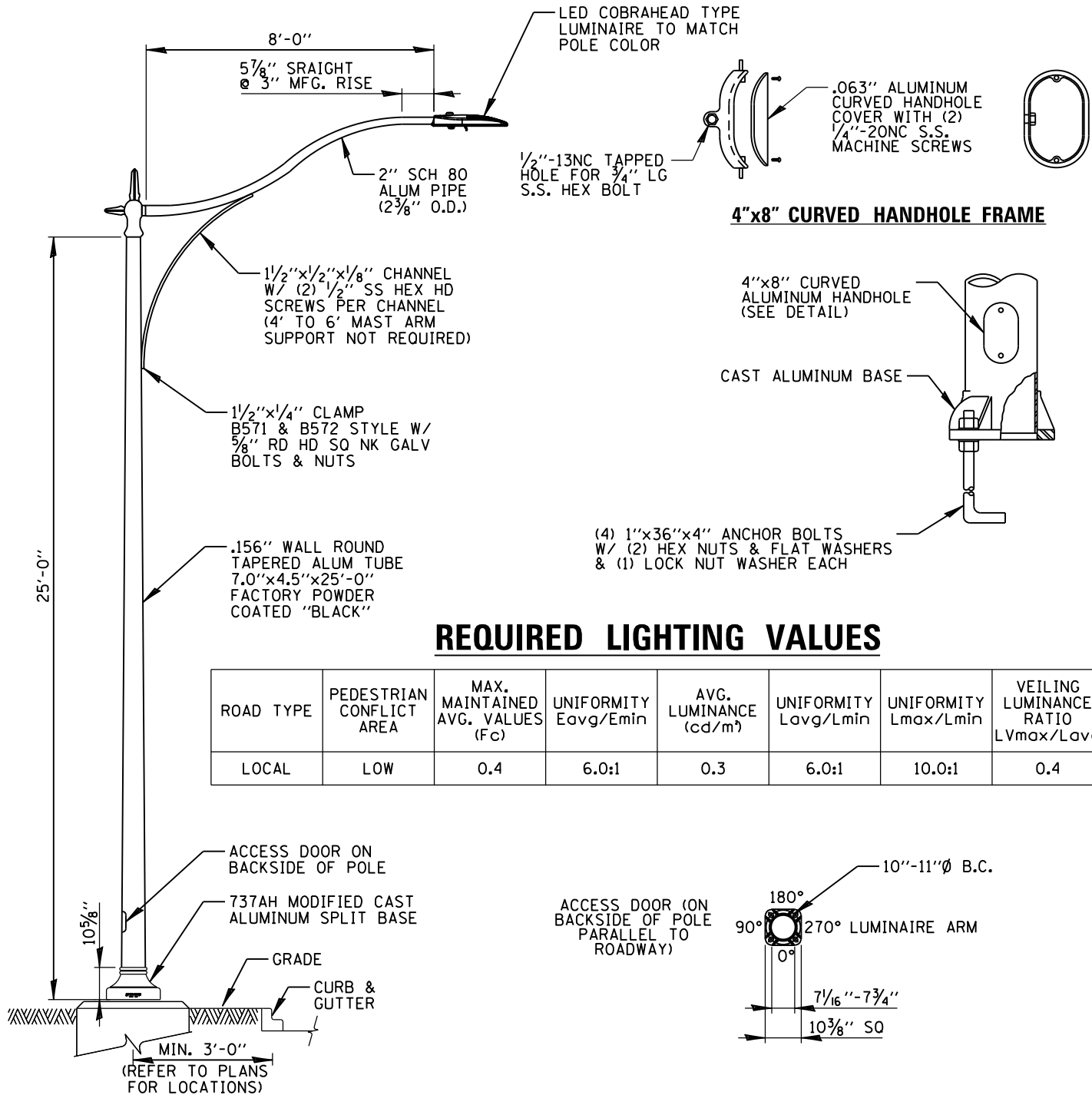
REQUIRED LIGHTING VALUES

ROAD TYPE	PEDESTRIAN CONFLICT AREA	MAX. MAINTAINED AVG. VALUES (Fc)	ILLUMINANCE UNIFORMITY Eavg/Emin	AVG. LUMINANCE (cd/m²)	LUMINANCE UNIFORMITY Lavg/Lmin	LUMINANCE UNIFORMITY Lmax/Lmin	VEILING LUMINANCE RATIO Lvmax/Lavg
LOCAL COLLECTOR	LOW	0.4	4.0:1	0.4	4.0:1	8.0:1	0.4

NOTES:

1. LIGHT POLES SHALL MEET WIND LOADING & VIBRATION REQUIREMENTS ACCORDING TO THE LATEST AASHTO STANDARDS AND ARTICLE 1069.01 IN STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. ALL STEEL SHALL BE FROM A DOMESTIC SOURCE.
3. ALL LUMINAIRES SHALL HAVE A MULTI-TAP BALLAST WIRED FOR 240 VOLTS OPERATION.
4. LIGHT POLE SHALL BE U/L LISTED.
5. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO ALL BOLTED AREAS DURING INSTALLATION.

Local Collector Roadway	
LIGHT STANDARD AND LUMINAIRE POLE DETAIL	
City of Genoa	
Public Works Dept. 100 Madison St. Genoa, Illinois 60135	Tel. 815-784-2327 Fax 815-784-4271 www.genoa-il.com



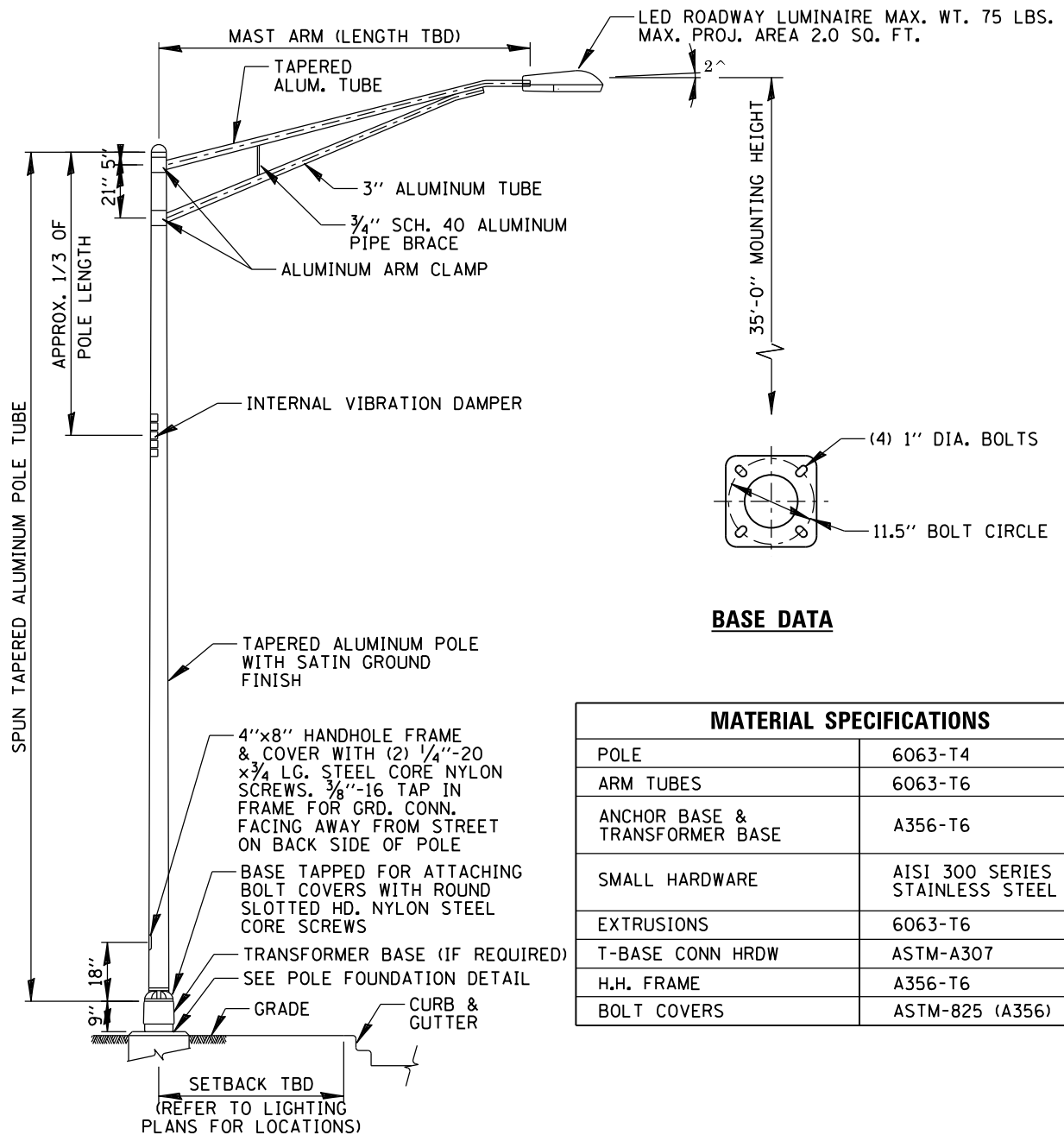
REQUIRED LIGHTING VALUES

ROAD TYPE	PEDESTRIAN CONFLICT AREA	MAX. MAINTAINED AVG. VALUES (Fc)	UNIFORMITY Eavg/Emin	AVG. LUMINANCE (cd/m²)	UNIFORMITY Lavg/Lmin	UNIFORMITY Lmax/Lmin	VEILING LUMINANCE RATIO Lvmax/Lavg
LOCAL	LOW	0.4	6.0:1	0.3	6.0:1	10.0:1	0.4

NOTES:

1. LIGHT POLES SHALL MEET WIND LOADING & VIBRATION REQUIREMENTS ACCORDING TO THE LATEST AASHTO STANDARDS AND ARTICLE 1069.01 IN STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. ALL STEEL SHALL BE FROM A DOMESTIC SOURCE.
3. ALL LUMINAIRES SHALL HAVE A MULTI-TAP BALLAST WIRED FOR 240 VOLTS OPERATION.
4. LIGHT POLE SHALL BE U/L LISTED.
5. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO ALL BOLTED AREAS DURING INSTALLATION.

Local Roadway	
LIGHT STANDARD AND LUMINAIRE POLE DETAIL	
City of Genoa	
Public Works Dept. 100 Madison St. Genoa, Illinois 60135	Tel. 815-784-2327 Fax 815-784-4271 www.genoa-il.com



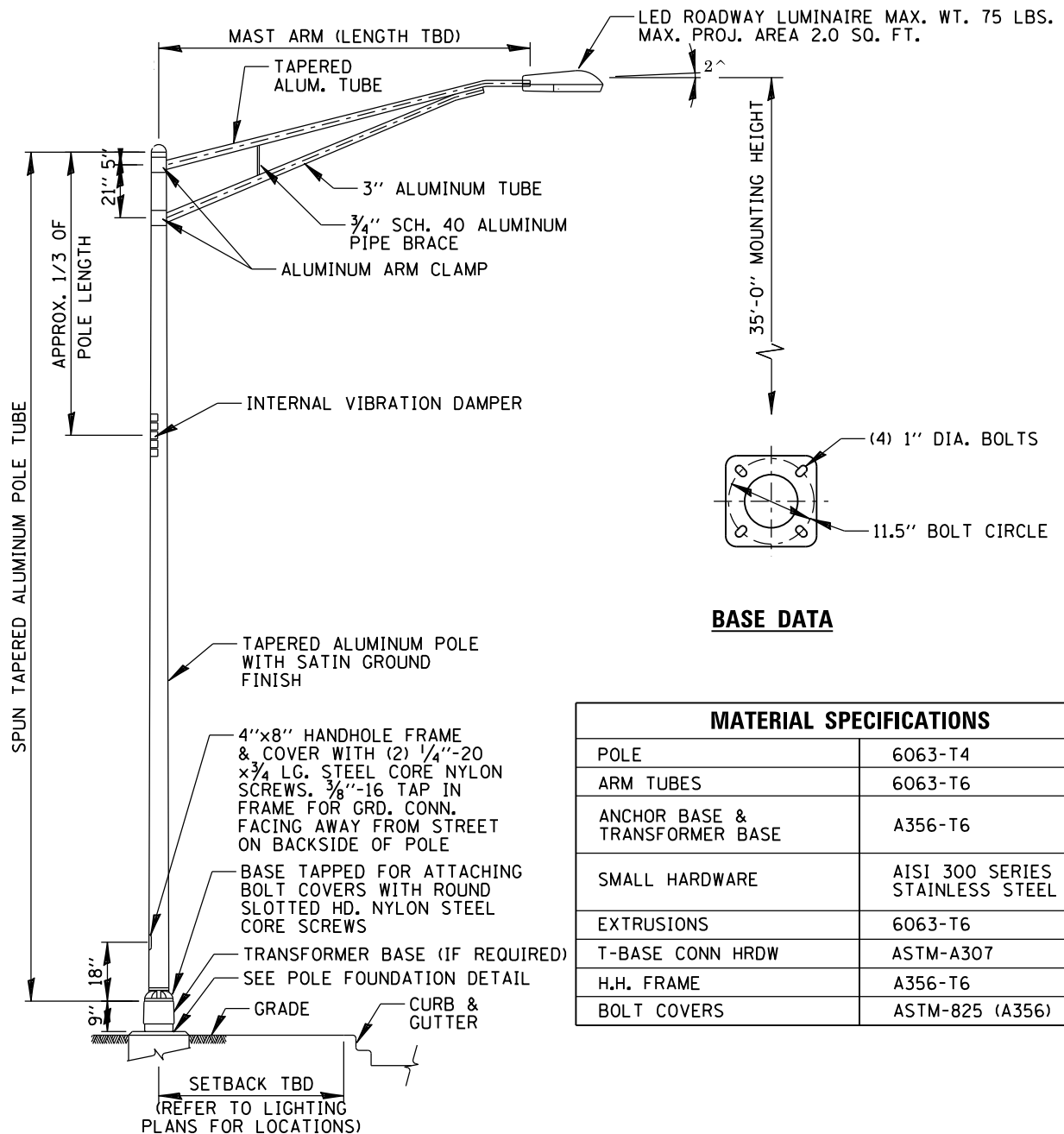
REQUIRED LIGHTING VALUES

ROAD TYPE	PEDESTRIAN CONFLICT AREA	MAX. MAINTAINED AVG. ILLUMINANCE VALUES (Fc)	ILLUMINANCE UNIFORMITY Eavg/Emin	AVG. LUMINANCE (cd/m²)	LUMINANCE UNIFORMITY Lavg/Lmin	LUMINANCE UNIFORMITY Lmax/Lmin	VEILING LUMINANCE RATIO LVmax/Lavg
COMMERCIAL	LOW	0.6	4.0:1	0.4	4.0:1	8.0:1	0.4

NOTES:

- LIGHT POLES SHALL MEET WIND LOADING & VIBRATION REQUIREMENTS ACCORDING TO THE LATEST AASHTO STANDARDS AND ARTICLE 1069.01 IN STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ALL STEEL SHALL BE FROM A DOMESTIC SOURCE.
- THE LIGHT STANDARD SHALL MEET THE ILLUMINATION REQUIREMENTS AS SPECIFIED IN THE LUMINAIRE PERFORMANCE TABLES IN THE SPECIFICATIONS. ALL LUMINAIRES SHALL HAVE A MULTI-TAP BALLAST WIRED FOR 240 VOLTS OPERATION.
- ALL LIGHT STANDARDS SHALL BE FROM THE SAME MANUFACTURER, OR APPROVED EQUAL.
- LIGHT POLE SHALL BE U/L LISTED.
- ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO ALL BOLTED AREAS DURING INSTALLATION.

Commercial Roadway	
LIGHT STANDARD AND LUMINAIRE DETAIL	
City of Genoa	
Public Works Dept. 100 Madison St. Genoa, Illinois 60135	Tel. 815-784-2327 Fax 815-784-4271 www.genoa-il.com



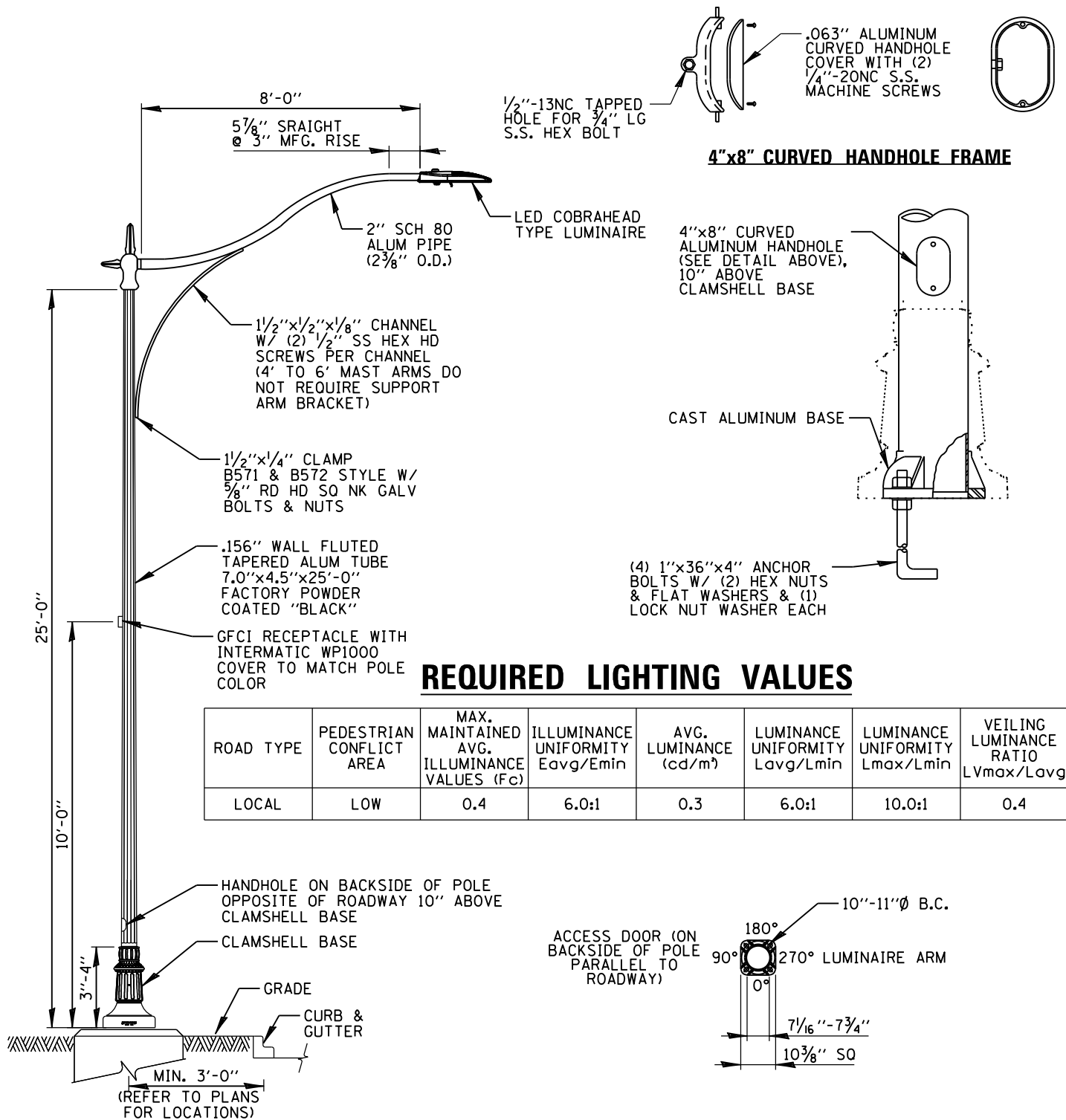
REQUIRED LIGHTING VALUES

ROAD TYPE	PEDESTRIAN CONFLICT AREA	MAX. MAINTAINED AVG. ILLUMINANCE VALUES (Fc)	ILLUMINANCE UNIFORMITY Eavg/Emin	AVG. LUMINANCE (cd/m²)	LUMINANCE UNIFORMITY Lavg/Lmin	LUMINANCE UNIFORMITY Lmax/Lmin	VEILING LUMINANCE RATIO Lvmax/Lavg
COMMERCIAL COLLECTOR	MEDIUM	1.3	3.0:1	0.9	3.0:1	5.0:1	0.3

NOTES:

1. LIGHT POLES SHALL MEET WIND LOADING & VIBRATION REQUIREMENTS ACCORDING TO THE LATEST AASHTO STANDARDS AND ARTICLE 1069.01 IN STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ALL STEEL SHALL BE FROM A DOMESTIC SOURCE.
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3. ALL LIGHT STANDARDS SHALL BE FROM THE SAME MANUFACTURER, OR APPROVED EQUAL.
4. LIGHT POLE SHALL BE U/L LISTED.
5. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO ALL BOLTED AREAS DURING INSTALLATION.

Commercial Collector Roadway	
LIGHT STANDARD AND LUMINAIRE DETAIL	
City of Genoa	
Public Works Dept. 100 Madison St. Genoa, Illinois 60135	Tel. 815-784-2327 Fax 815-784-4271 www.genoa-il.com



REQUIRED LIGHTING VALUES

ROAD TYPE	PEDESTRIAN CONFLICT AREA	MAX. MAINTAINED AVG. ILLUMINANCE VALUES (Fc)	ILLUMINANCE UNIFORMITY Eavg/Emin	AVG. LUMINANCE (cd/m²)	LUMINANCE UNIFORMITY Lavg/Lmin	LUMINANCE UNIFORMITY Lmax/Lmin	VEILING LUMINANCE RATIO Lvmax/Lavg
LOCAL	LOW	0.4	6.0:1	0.3	6.0:1	10.0:1	0.4

NOTES:

1. LIGHT POLES SHALL MEET WIND LOADING & VIBRATION REQUIREMENTS ACCORDING TO THE LATEST AASHTO STANDARDS AND ARTICLE 1069.01 IN STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
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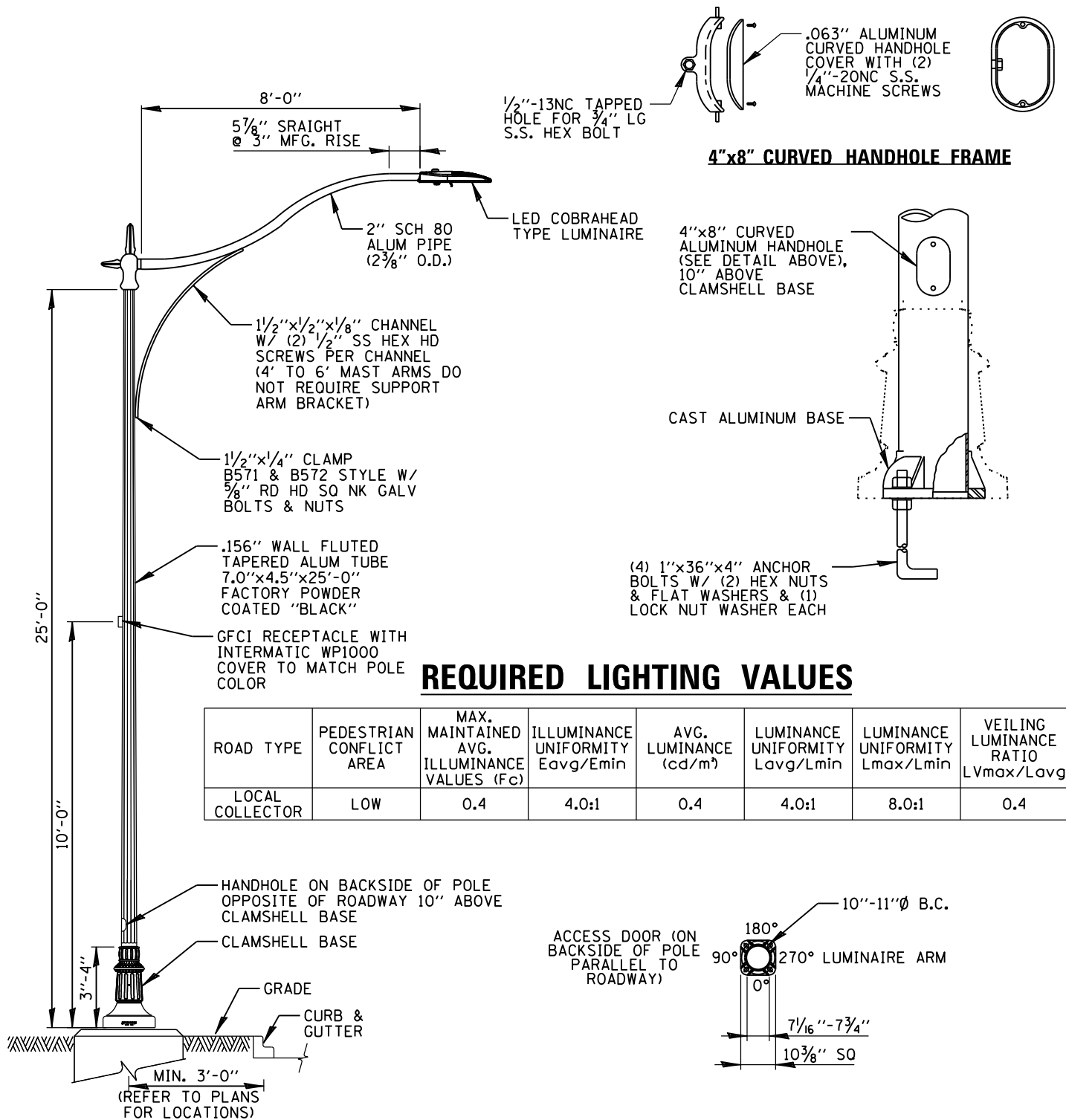
DECORATIVE LIGHTING DETAIL

LOCAL ROADWAY POLE DETAIL

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

Tel. 815-784-2327
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NOTES:

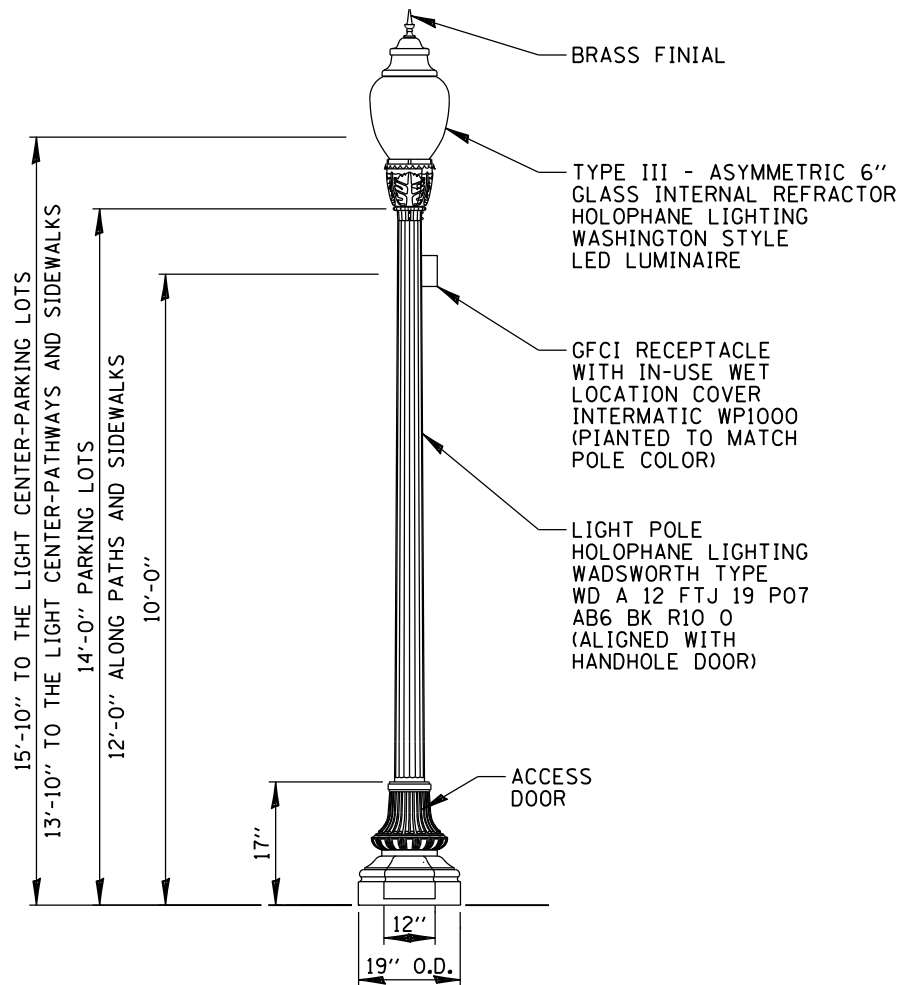
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5. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO ALL BOLTED AREAS DURING INSTALLATION.

LOCAL COLLECTOR ROADWAY POLE DETAIL

City of Genoa

Public Works Dept.
100 Madison St.
Genoa, Illinois 60135

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Fax 815-784-4271
www.genoa-il.com



NOTES:

1. ACORN LUMINAIRES CANNOT BE INCLUDED IN ROADWAY PHOTOMETRIC CALCULATIONS, HOWEVER ACORN LUMINAIRES CAN BE INCLUDED IN SITE LIGHTING PHOTOMETRIC CALCULATIONS.
2. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO ALL BOLTED AREAS DURING INSTALLATION.

DECORATIVE LIGHTING	
ORNAMENTAL POST TOP POLE DETAIL	
City of Genoa	
Public Works Dept. 100 Madison Street Genoa, Illinois 60135	Tel. 815-784-2327 Fax. 815-784-4271 www.genoa-il.com