



# ENGINEERING CONSTRUCTION DETAILS

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**ADOPTED DATE: SEPTEMBER, 2019**

**GENERAL ITEMS**

- 1. Prior to any construction the contractor shall be familiar with the contract documents, specifications, construction plans (including notes), City of Celina specifications and any other applicable standards or specifications relevant to the proper completion of the work specified. Failure on the part of the contractor to be familiar with all standards and specifications pertaining to this work shall in no way relieve the contractor of responsibility for performing the work in accordance with such applicable standards and specifications.
- 2. Prior to construction, contractor shall have in their possession all necessary permits, plans, licenses etc. Contractor shall have at least one set of approved engineering plans and specifications on site at all times.
- 3. All work shall conform to the City of Celina's design manuals and standards. In the event an item is not covered in the plans or the City of Celina's design manuals and standards, notification shall be given to the City and Project Engineers. The City engineer shall have the final decision on all construction materials, methods and procedures.
- 4. Representative of the owner, engineer, City, geotechnical engineer and reviewing authorities and agencies, will perform construction inspection. Unrestricted access shall be provided to them at all times. Contractor is responsible for understanding and scheduling required inspections. Test samples shall be collected and processed by certified technicians.
- 5. Work may not be backfilled or covered until the City and/or inspector have inspected it.
- 6. All contractors must confine their activities to the work area. No encroachments onto developed or undeveloped areas will be allowed. Any damage resulting shall be contractor's responsibility to repair.
- 7. Developer shall be responsible for obtaining all offsite easement prior to commencement of offsite and relevant onsite construction.
- 8. It will be the responsibility of each contractor to protect all existing public and private utilities throughout the construction of projects. Contractor shall contact the appropriate utility company for line locations prior to commencement of construction and shall assume full liability to those companies for any damages caused to their facilities.

Digtess	800-dig-tess
Atmos Energy	214-341-8900/ 972-881-4161
Oncor Electric Delivery	888-313-6862
AT & T	972-569-3013
City Of Celina	972-382-2682
Time Warner Cable	213-320-5435
Grande Communications	972-410-0592
Coserve Electric & Gas	940-321-7800
Marilee SUD	972-382-3222
GCEC - Electric	903-821-3007
GCEC - Telecom	903-482-7274
Grosstex Energy	817-570-6753
Sudden Link	469-853-0486
Oneok	903-257-6594
Grande	972-410-0583
Town Of Prosper	972-347-9969

- 9. Trench safety design will be the responsibility of the utility contractor. Contractor shall submit a trench safety design approved by a professional engineer to the City's engineering inspector to review prior to the start of any underground utility construction.
- 10. Continuous access for mail service shall be provided during construction.
- 11. Construction may not begin earlier than 7:00 am on weekdays nor continue after dark without permission from the City. Construction on holidays and Saturdays must be approved two days in advance. A fee of \$300.00 a day for working on holidays and Saturdays will be assessed payable to the City before work is performed and work may not begin before 8:00 am.
- 12. The owner will pay for first time material testing, any retesting will be at contractor's expense. Material testing shall be performed by an independent testing laboratory of owner's choice.
- 13. The City shall select the location and depth of each soil density test unless directed otherwise.
- 14. Contractor shall contact the street department for the removal of any City signs in right-of-way.
- 15. If any conflict arises between these general notes and any other notes found in the plans, the City's general notes shall take precedence.

**TRAFFIC CONTROL**

- 1. When the normal function of the roadway is suspended through closure of any portion of the right-of-way, temporary construction work zone traffic control devices shall be installed to effectively guide the motoring public through the area. Consideration for road user safety, worker safety and the efficiency of road user flow shall be an integral element of every traffic control zone. All traffic control devices shall be in accordance with the latest TMUTCD.
- 2. Any traffic control plans not included in the engineering plan set must be submitted for review a minimum of seven (7) calendar days prior to the anticipated lane closure. Construction activity shall not begin until the traffic control plan is approved by the City. Traffic control plans may be required on other roadways as determined by the traffic engineer or the designee. All traffic control plan must be reviewed by the traffic engineer or their designated representative.
- 3. The contractor shall be responsible for maintaining all traffic control devices whether or not work is active. Any deficiencies shall be corrected by the contractor immediately, regardless of time of day.
- 4. Lane closure will not be permitted on arterial roadways before 9:00 am or after 4:00 pm unless approved otherwise by the City. Violations may result in suspension of all work at the job site for a minimum of forty eight (48) hours. The City reserves the right to deny a closure for a special event.
- 5. Lane closures will not be permitted on streets adjacent to private and/or public schools during the following hours unless approved otherwise by the City:  
ELEMENTARY: 7:15 AM - 8:15 AM; 2:45 PM - 3:45PM  
MIDDLE SCHOOL: 7:55 AM - 9:00 AM; 3:30 PM - 4:40PM  
HIGH SCHOOL: 6:45 AM - 7:45AM; 2:15PM-3:15PM
- 6. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time at the end of the workday, temporary traffic control devices that are no longer appropriate shall be removed or covered. The first violation will result in suspension of all work at the job site a minimum of forty eight (48) hours.
- 7. Existing permanent signs removed by the contractor for construction purposes other than stop, yield and street name signs shall be returned to the City of Celina. All stop, yield and street name signs removed shall be temporarily erected in the appropriate locations (no less than seven feet (7') vertical from grade) until permanent signing can be installed. Any temporary stop or yield sign locations to be left in place overnight will require prior approval from the City engineer.
- 8. Any permanent sign or existing pavement markings that conflict with the approved traffic control plan shall be covered, obliterated or removed as directed by the City engineer.
- 9. Access must be maintained to all drives and side streets or as indicated in the traffic control plan.

**EROSION CONTROL AND VEGETATION**

- 1. Every soil disturbing activity shall have an accompanying Erosion Control Plan (ECP), and either Construction Site Notice (CSN) for those activities disturbing more than one (1) but less than five (5) acres and/or Notice of Intent (NOI) for those activities disturbing five (5) or more acres. A copy of the appropriate CSN and/or NOI shall be provided to the City of Celina prior to issuance of a grading permit. The ECP shall be provided to City of Celina's engineering department for approval prior to grading.
- 2. The CSN and/or NOI shall be posted in a location viewable to the public until construction is complete and notice of termination (NOT) submitted. The Storm Water Pollution Prevention Plan (SW3P) shall be readily available for review by federal, state or local officials.
- 3. No soil disturbing activities will occur prior to the SW3P, ECP and associated Best Management Practices (BMP) being fully implemented, and then inspected by the City's engineering inspector.
- 4. The contractor shall comply with the City of Celina's storm water ordinance, the current NCTCOG ISWM technical manual for construction, the TPDES general construction permit TXR150000 and any other state and/or local regulations.
- 5. The contractor shall employ measures as necessary to prevent dirt, mud, and debris from being trucked off site. Any dirt, mud, debris trucked offsite shall be cleaned up by the contractor immediately.
- 6. The operator or his representative shall review the site weekly and after any major storm. Adjustments/repairs to the erosion control measures will be made as needed. The contractor shall notify the City's engineering inspector of adjustments/repairs such that the adjustments/repairs may be inspected and approved by the inspector.
- 7. Along parkways and medians in the right-of-way, a four-foot (4') strip of native sod shall be placed behind the curb on top of four inches (4") of topsoil. Contractor shall be responsible for any temporary irrigation or watering as needed. Areas adjacent to new residential lots, where the homebuilder will be disturbing this area, may be exempted from this requirement so long as adequate erosion control measures are installed and maintained behind the curb.
- 8. A minimum of eight feet (8') of the appropriate seasonal seeded Curlex shall be provided adjacent to all street and fire lane curbs and four feet (4') adjacent to alleys. The use of innovative products is encouraged, such as those made with composting materials, as long as they are approved by the Director of Engineering Services and permanent vegetative stabilization is established.
- 9. Contractor shall establish perennial vegetation on all other disturbed areas immediately upon completion of grading activities. An appropriate seed mix should be considered with respect to the season and the timing of final acceptance. A cool season seed mix should be used between September 15, and April 15. Final acceptance of a site shall be contingent upon perennial vegetation being fully established in all disturbed areas.
- 10. A Completed Notice of Termination (NOT) shall be submitted to the state and a copy of this "NOT" shall be provided to the City prior to final acceptance.
- 11. Inspections shall be performed every seven (7) days and any repair or maintenance on erosion controls and best management practices will be made promptly as needed.
- 12. No excavation or curb cut-backs will be allowed within eighteen inches (18") of the street or curb without approval from the City engineer.
- 13. Streets will be kept free from mud or earth materials during the construction.
- 14. Use of alternate erosion control devices must be approved in advance by City engineer and shown clearly on the erosion control plans prior to any earth disturbing activities.
- 15. The requirements of NCTCOG best management practices standards shall apply to all alternate erosion control devices as amended by the City.
- 16. Concrete wash-out shall be maintained and shall have signage and shown on erosion control drawings.

**GRADING:**

- 1. Top soil stripping and replacement: Top soil stripping shall be incorporated into landscape areas outside overbuilt pads, in street parkways, medians, open space, earthen drainage ditches and swales for all subdivisions. A minimum of four inches (4") of topsoil shall be placed in advance of grassing operations. The grading operations shall accommodate topsoil to be placed in the designated areas. Stockpiled topsoil shall be protected from erosion with appropriate erosion control measures at all time. Once the excess material has been placed and compacted, the top soil shall be evenly redistributed on top of the placed fill before being re-vegetated.
- 2. Re-grading work shall be closely coordinated with the owner and engineer before and as the work is being accomplished. Once started, the work shall be proceeded with diligence until complete.
- 3. All new work shall slope uniformly between spot elevations unless noted otherwise. Provide positive drainage on all finish grades.
- 4. In areas to be filled, all trees, stumps, brush, abandoned structures, roots, topsoil, vegetation, sediments, large rock fragments, rubbish and any other undesirable or deleterious matter shall be properly removed and disposed off. All top soil, roots and other vegetation and loose or soft soils shall be stripped to a depth of six inches (6") or to the extent practical. It is recommended that trees scheduled for removal in the vicinity of proposed slab-on-grade foundations be removed as far in advance of slab construction as possible. This will tend to restore a more favorable soil moisture equilibrium which will in turn minimize the potential for greater than anticipated post-construction ground movements. Trees should be excavated to below their root balls. Excavation should be filled with soil similar to the surrounding soil. The fill should be constructed in accordance with the recommendations presented in the preliminary geotechnical investigation.
- 5. Watering of earthwork placed in fill areas may be necessary to achieve the specified moisture density requirement and to germinate/sustain grass cover in areas to receive a vegetative cover after grading is complete. The contractor may request for a fire hydrant meter from the city for construction water use or obtain water from an alternate source. No extra payment will be made to the contractor for water.
- 6. Contractors are directed to ensure that all swales as shown on the grading plans are properly installed. At locations where retaining walls exist and/or are proposed behind, beside or between lots, swales must be created on the upper lot directly behind the wall and on the lower lot adjacent to the wall where shown to convey surface drainage in the direction shown on the grading plan.

**ESTABLISHMENT OF GROUND COVER**

- 1. Eighty percent (80%) evenly distributed ground cover, without large bare areas, shall be established after the designated areas have been completed to the lines, grades and cross sections shown on the plans and prior to final acceptance.
- 2. Prior to planting, contractor shall provide the city engineer, or his designee, with the State of Texas certificate stating analysis of purity and germination of seed (certificate of purity).
- 3. Planting season and application rates: all planting shall be done between the dates specified in table 1, for each grass type except when specifically authorized in writing. The seeds planted per acre shall be of a type specified with the mixture, rate and planting dates as shown in the table 1, or as specified by the engineer.

Table 1. Seeding Turfgrass

Type	Planting Season	Seed and Rate
Type I	March through September	Bermuda grass, Hulled 50-LB (22.7-KG ) PLS <sup>1</sup> per acre
Type II	October through February	Rye grass, 100-LB (45.4-KG) pls per acre combined with Bermuda grass, Hulled 20-LB (9.1-KG ) pls <sup>2</sup> per acre.
Other	As specified on plans	As specified on plans

<sup>1</sup>PLS - Pure Live Seed is determined by multiplying the gross weight times purity times the germination (For example, a 100-lb bag with 85% purity and 80% germination. (PLS=pounds in bag x Purity x germination) 100 x 0.85 x 0.8 = 60.8 -lbs of pure live seed.)

- 4. Seeded areas shall be maintained, including watering and mowing, at such time and in a manner and quality to establish a minimum eighty percent (80%) evenly distributed ground cover.
- 5. In lieu of silt fences, the contractor shall use temporary erosion control matting and/or mulching perimeter guard to stabilize disturbed soil area.

- 6. Erosion control mats used against paved areas shall have a width of no less than eight feet (8'). No hay products shall be used.
- 7. All material incorporated in the construction shall be new.

**PAVING**

- 1. All mix designs shall be sealed by a professional engineer and submitted to the City inspector ten (10) days before a scheduled placement. Mix designs are subject to approval by the City engineer.
- 2. All concrete paving shall have a minimum compressive strength of four thousand (4000) psi unless a higher compressive strength is specified.
- 3. All fill shall be compacted to ninety five percent (95%) standard proctor density in a maximum of six inches (6") lifts or per the approved geotechnical engineers report. Copy of geotechnical report shall be submitted to the City for approval.
- 4. Subgrade shall extend twenty-four inches (24") minimum behind the curb, be a minimum of six inches (6") thick and shall be lime or cement stabilized as recommended in the geotechnical report. The amount of lime to be added shall be sufficient to achieve plasticity index not to exceed twelve (12).
- 5. A subgrade density report must be presented to the City inspector prior to paving. Densities are only valid for seventy-two (72) hours. Densities received on a Friday are valid until noon on the following Monday. Densities taken before inclement weather may be required to be retaken at the City inspector's discretion. A minimum of four (4) test cylinders are required for breaks at seven (7) days, two (2) at twenty- eight (28) days and the last cylinder being an extra.
- 6. All City streets are required to be paved with the use of an approved slip form paving machine with mechanical vibration. Hand pours are only allowed at intersection returns or other non-standard areas as approved by the City inspector. Hand pours shall be vibrated by an approved hand vibrator.
- 7. Sidewalks concrete shall be vibrated to expel all trapped air pockets.
- 8. All median noses shall be laid down type (see details) and poured monolithically.
- 9. Expansion joints in pavements shall be redwood boards only with a maximum spacing of six hundred feet (600') and must be sawcut within eighteen (18) hours of placement.
- 10. All barrier free ramps shall comply with the current ADA and TxDOT regulations. No pavers are allowed.
- 11. There shall be no leave outs for utility adjustments; all manhole, valve sets etc. shall be constructed to final grade prior to paving.
- 12. Medians and parkways shall be sodded (no seeding). Contractor shall ensure the establishment of all sods prior to project final acceptance. Contractor shall contact City of Celina's streets department prior to the removal of any City signs in right-of-way.
- 13. All lime shall come from a single source, shall be the same source as used in the design, and shall be subjected to periodic testing to confirm properties. Each shipment of lime shall be accompanied by a certificate of compliance stating the conformance of the product to the City's specifications. Certificates shall be provided to the city. In the event the contractor changes lime sources, no work shall be done until the City accepts, in writing, a new lime-soil mix design using the new lime source.
- 14. All water used in the construction shall meet the material requirements in AASHTO T 26. Known potable water may be used without testing.
- 15. Subgrade soils used in the stabilization shall be of the same AASHTO OR ASTM Classification and plasticity index range as used in the approved mix design. All organics, roots and deleterious materials shall be removed from the area to be stabilized and shall be wasted.
- 16. Asphalt used to seal the surface of the lime stabilized subgrade shall be approved by the City and shall conform to the requirements of TxDOT Item 300, "ASPHALTS, OILS AND EMULSIONS". Each shipment shall be accompanied by a certificate of compliance stating the conformance of the product to these specifications which shall be provided to the City.
- 17. Unless otherwise approved by the City, the lime operation shall not be started when the air temperature is below forty degrees fahrenheit (40° F) and falling, but may be started when the air temperature is above thirty-five degrees fahrenheit (35° F) and rising. The temperature will be taken in the shade and away from artificial heat. Lime shall not be placed during periods of rain or when weather conditions in the opinion of the City are not suitable.
- 18. Slurred quick lime shall be spread and mixed within one (1) hour. Slurry exposed to air for over one (1) hour shall not be accepted. Dry quick lime shall be used only upon City's approval and shall be spread only on that area where the mixing operations can be completed during the same working day. Dry quick lime shall not be applied when wind conditions, in the opinion of the city, are such that blowing lime becomes objectionable to adjacent property owners or dangerous to traffic.
- 19. If subgrade lime stabilization is to be reprocessed a three percent (3%) additional lime shall be required.

**STORM SEWER**

- 1. The contractor shall field verify the vertical and horizontal locations of all existing utilities prior to start of construction. The contractor shall notify the design engineer immediately if any conflict is discovered.
- 2. Contractor shall verify and coordinates all dimensions shown, including the horizontal and vertical location of curb inlets and all utilities crossing the storm sewer. Flow lines and rims of proposed inlets shall be verified with the proposed grade prior to construction.
- 3. In event where a water line crosses an inlet, the water line shall be deflected as recommended by manufacturer.
- 4. Existing manhole tops and all other drainage facilities shall be adjusted as required to match final grades.
- 5. Recessed curb inlet shall be installed on all major thoroughfares and standard on residential thoroughfares unless approved otherwise by the City.
- 6. Prior to final acceptance, all storm sewers shall be television inspected and cleared of any sediments and debris.

**TREE PRESERVATION**

- 1. Prior to construction, the contractor or subcontractor shall construct and maintain a protective fence at the drip line of all protected existing trees, bushes, landscaping plants, sprinklers and lawns unless noted otherwise on the construction drawings. Any damage to existing trees, landscaping plants, sprinklers and lawns caused by construction shall be replaced to the satisfaction of the City at the contractor's expense.
- 2. All protective measures shall be in place prior to commencement of any site or grading work and remain in place until all exterior work has been completed.
- 3. The City shall be contacted to approve the placement of the tree preservation fencing prior to beginning of site work on the property.
- 4. The following activities shall be prohibited within the limits of the primary root zone: material storage, liquid disposal, equipment storage and cleaning. Attachments of signs or wires on trees and construction equipment/ vehicular traffic are also prohibited.
- 5. Unless specifically allowed, no grade changes shall be allowed within the limits of the primary root zone of any protected tree unless the City approves adequate construction methods.
- 6. No trimming of trees may occur within the tree preservation fencing limits without prior consent of the City.

**SANITARY SEWER**

- 1. Line and grade stakes for construction of all sanitary sewer lines and services shall be furnished by the following:
  - a. Private development : developers engineer, surveyors or their designated representative
  - b. Capital improvement projects: the contractor, unless specified otherwise in the contract
- 2. Property lines and corners must be properly staked to verify the alignment. The city shall not be liable to improper alignment or delay of any kind caused by improper or inadequate surveys.
  - a. All property corners shall be staked with iron rods prior to the installation.
  - b. The locations of the wastewater service shall be staked according to the plans.
- 3. PVC pipe shall not be stored onsite without approval from the City.
- 4. When PVC wastewater pipe is installed in casing, spacers must be used according to manufacturer's specification to prevent damage to the pipe and bell during installation. PVC Pipe shall not rest on the bells.
- 5. Maximum pipe deflection shall be as recommended by the manufacturer.
- 6. Wastewater services shall be marked with "S" stamped or cut in the curb.
- 7. Tracer wire shall be required for sanitary sewer force mains and not gravity mains.
- 8. Sanitary sewer manholes shall be a minimum of two feet (2') above the 100 year base flood elevation (BFE) or shall be sealed.
- 9. Inflow and Infiltration (I&I) prevention apparatus shall be required on all sanitary sewer manholes whenever grade rings are utilized

**WATER**

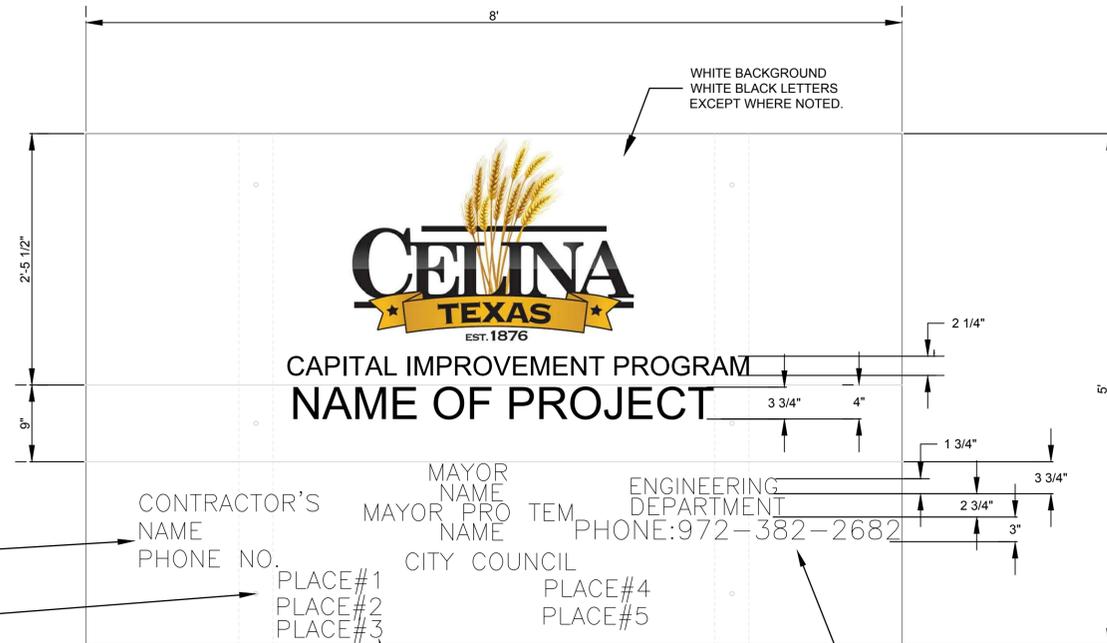
- 1. Line and grade stakes for construction of all water lines and services shall be furnished by the following:
  - a. Private development : developer's engineer, surveyors or their designated representative.
  - b. Capital improvement projects: the contractor, unless specified otherwise in the contract
  - c. Property lines and corners must be properly staked to verify the alignment. The city shall not be liable to improper alignment or delay of any kind caused by improper or inadequate surveys.
- 2. All water services and water meters shall be size on size. No reductions in water meter sizing are allowed for single services. Unless approved otherwise, all new water services shall be one inch (1") minimum HDPE pipe with one inch (1") minimum compression fitting, ten-inch (10") meter setter, an angle stop and a one piece brass extending a minimum of six inches (6") beyond the meter box.
- 3. Meters three inches (3") and bigger are required to be in vaults. There will be no rising stem valves in vaults and blocking on valves shall be concrete. Metallic blockings are not allowed.
- 4. PVC water pipe shall not be stored onsite without approval from the City.
- 5. All fittings and appurtenances shall be manufactured in the United States.
- 6. Hot tap sleeves shall not be used unless approved otherwise. In event of its approval, a stainless steel sleeve shall be used.
- 7. Valves installed on waterlines shall be non-rising stem resilient wedge gate valves, open left unless specified otherwise.
- 8. Valve extensions shall only be used under approved conditions.
- 9. All valve locations shall be marked with "V" stamped or cut on the curb.
- 10. Where specified name brands are indicated, products of equal or better quality may be considered for approval upon submittal of all supporting data to the City engineer for review.
- 11. The contractor shall provide for temporary three-inch (3") cold mix asphaltic concrete to be placed over all vehicular traveled areas until the final repairs / improvements are made.
- 12. All valve stacks and covers on abandoned water mains shall be removed and filled with concrete; surface shall be repaired to match existing.
- 13. All material incorporated in the construction shall be new.

**TESTING REQUIREMENTS**

- 1. Material testing shall be performed by an independent testing laboratory and paid for by the contractor. The following material tests shall be provided by the contractor:
  - a. Embankment - one soil density test shall be performed at each location every 300 feet. It shall be compacted to 95% standard proctor density in a maximum of 12" lifts or per approved geotech report.
  - b. Pavement sub grade - one gradation test (where lime stabilized) and one soil density test shall be performed for each 300 linear feet of pavement unless otherwise noted. Gradations must pass 100% through a 1 3/4" sieve and 60% through a #4 sieve.
  - c. Utility trench backfill - one soil density test shall be performed at three hundred feet (300') intervals or as directed by the inspector.
  - d. Concrete tests:
    - 1. Compressive strength - four test cylinders shall be taken from a representative portion of the concrete being placed for every one hundred and fifty cubic yards(150 cy) of concrete pavement placed, but in no case shall less than two (2) sets of cylinders be taken from any one day's placement.)
    - 2. Air, slump, and temperature tests shall be taken for every set of cylinders made. concrete with a temperature above 95° F will be rejected.
    - 3. Additional cylinders and/or tests may be required at the inspector's discretion.
- 2. All utility ditch lines within City R.O.W. or easement shall be tested at a frequency of one density per six to eight inches (6"-8") lifts (not to exceed twelve inches (12") ) at staggered one hundred feet (100') intervals. All laterals or services shall have a minimum of one density test per foot of lift. The inspector shall have the right to request additional random tests as he/she deems necessary.
- 3. Water testing:
  - a. Water testing shall be scheduled forty eight (48) hours in advance and set up through the City inspector.
  - b. Hydrostatic test shall be performed at a pressure of 150 psi for four (4) hours according to NCTCOG Item 506.5
  - c. Bacteriological tests shall be performed after the passing of the hydrostatic test. Water samples shall be collected and submitted to a City approved laboratory by the Contractor.
  - d. Fire hydrants shall be flow tested and painted according to the specified color codes by the contractor.
- 4. All sanitary sewers and laterals shall be tested by pulling a mandrel, air pressure test and CCTV. The CCTV inspection shall be provided to the City inspector in a digital format and shall be labeled accordingly for City's record.

<b>CITY OF CELINA</b>				
<b>CONSTRUCTION NOTES 1</b>				
<b>STANDARD DETAILS</b>				
				
DESIGNED BY: C.O	REV. BY	DATE	SYMBOL	DATE: SEPTEMBER, 2019
CHECKED BY: K.B	C.O	8-27-19		SHEET NO.: CN - 1

SWPPP NOTICE AND INFORMATION SHALL BE ATTACHED TO ALL CIP SIGNS POST ON SEPARATE BOARD WITH WEATHER PROTECTION.



WHITE BACKGROUND WHITE BLACK LETTERS

6"x1/2" GALV. BOLT 6 EA. TYP.

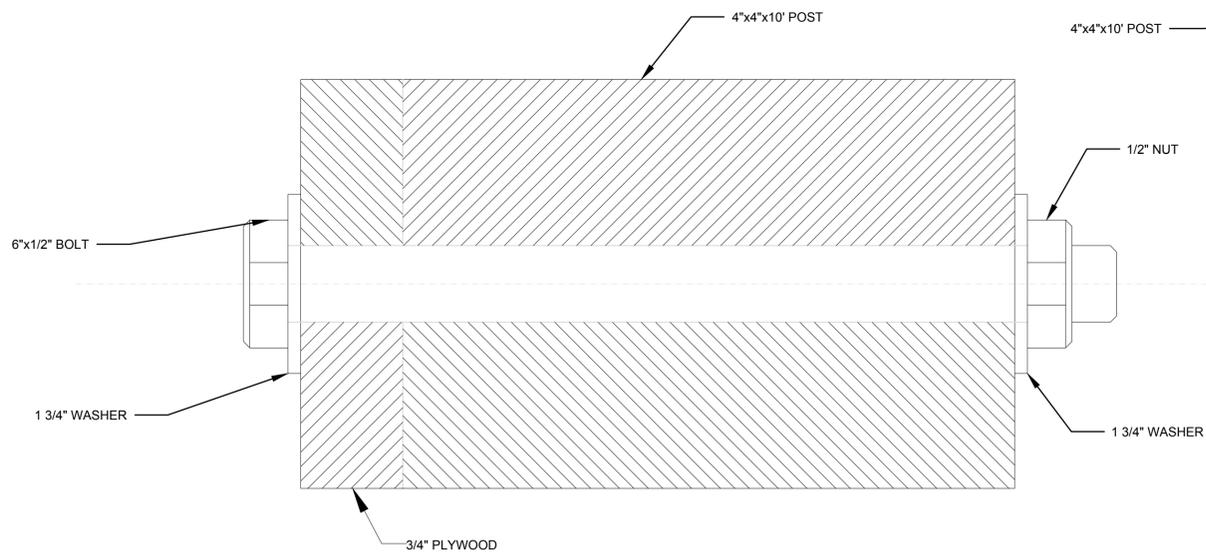
USE 1-3/4" LETTER HEIGHT AND 1-1/4" SPACING BETWEEN LINES CENTER ON LOWER HALF OF SIGN AS SHOWN.

WHITE BACKGROUND WHITE BLACK LETTERS

4"x4"x10' POST

TAMPED EARTH

1. SIGN BOARD SHALL BE 3/4" EXTERIOR RATED PLYWOOD SANDED ON FACE SIDE.
2. POST SHALL BE 4"x4"x10' PRESSURE TREATED MOUNTED 30" MIN. IN GROUND.
3. 6 EA. BOLTS SHALL BE 6"x1/2" GALV. BOLTS.

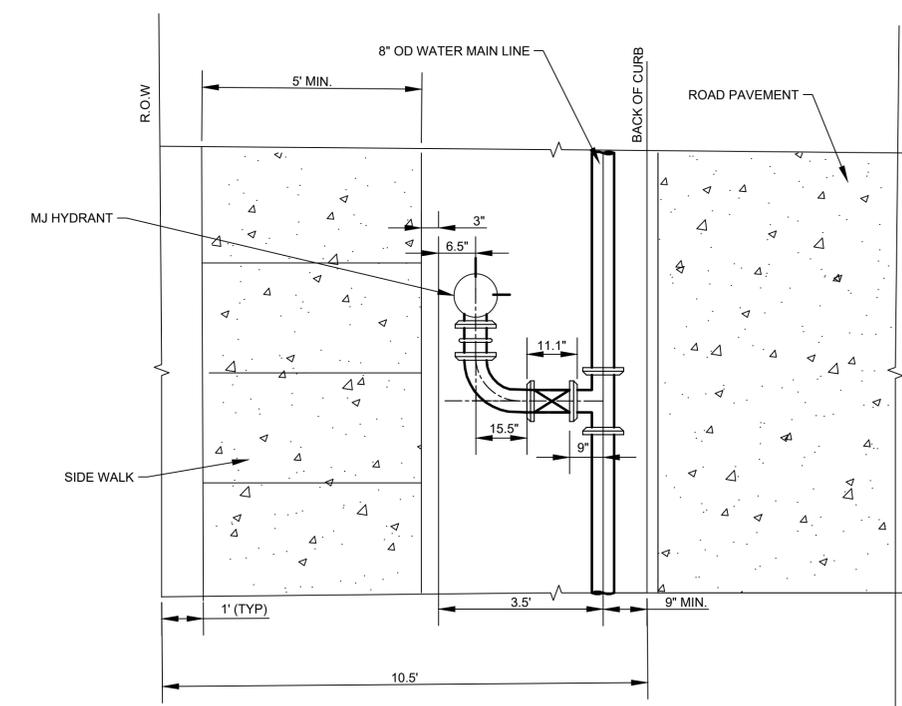
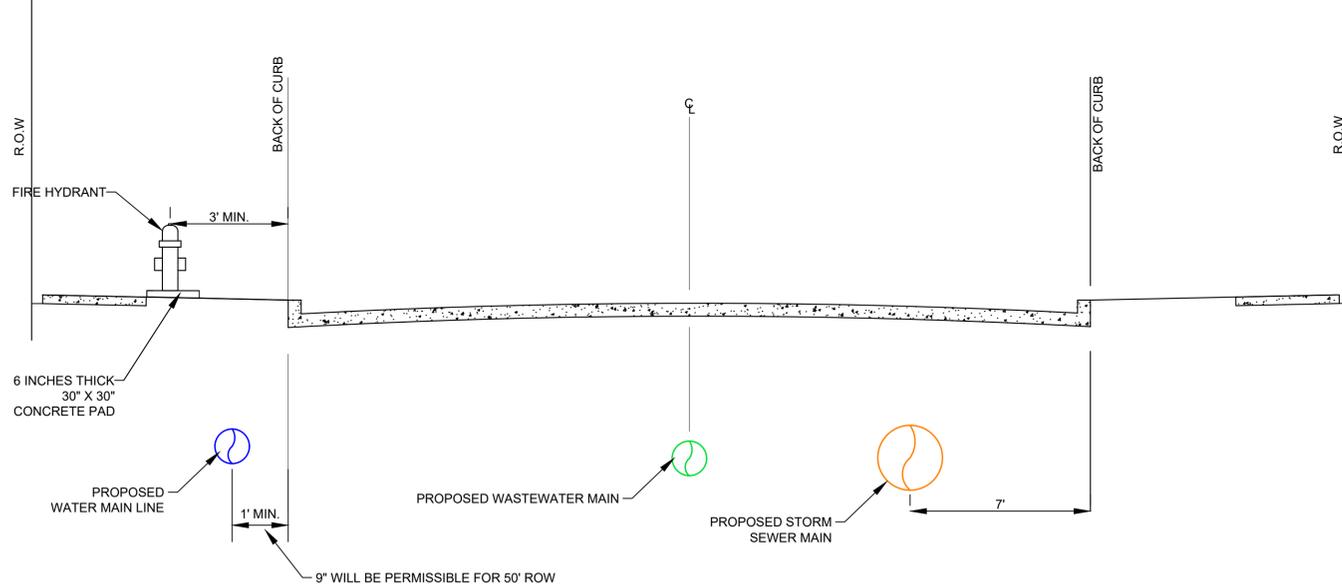
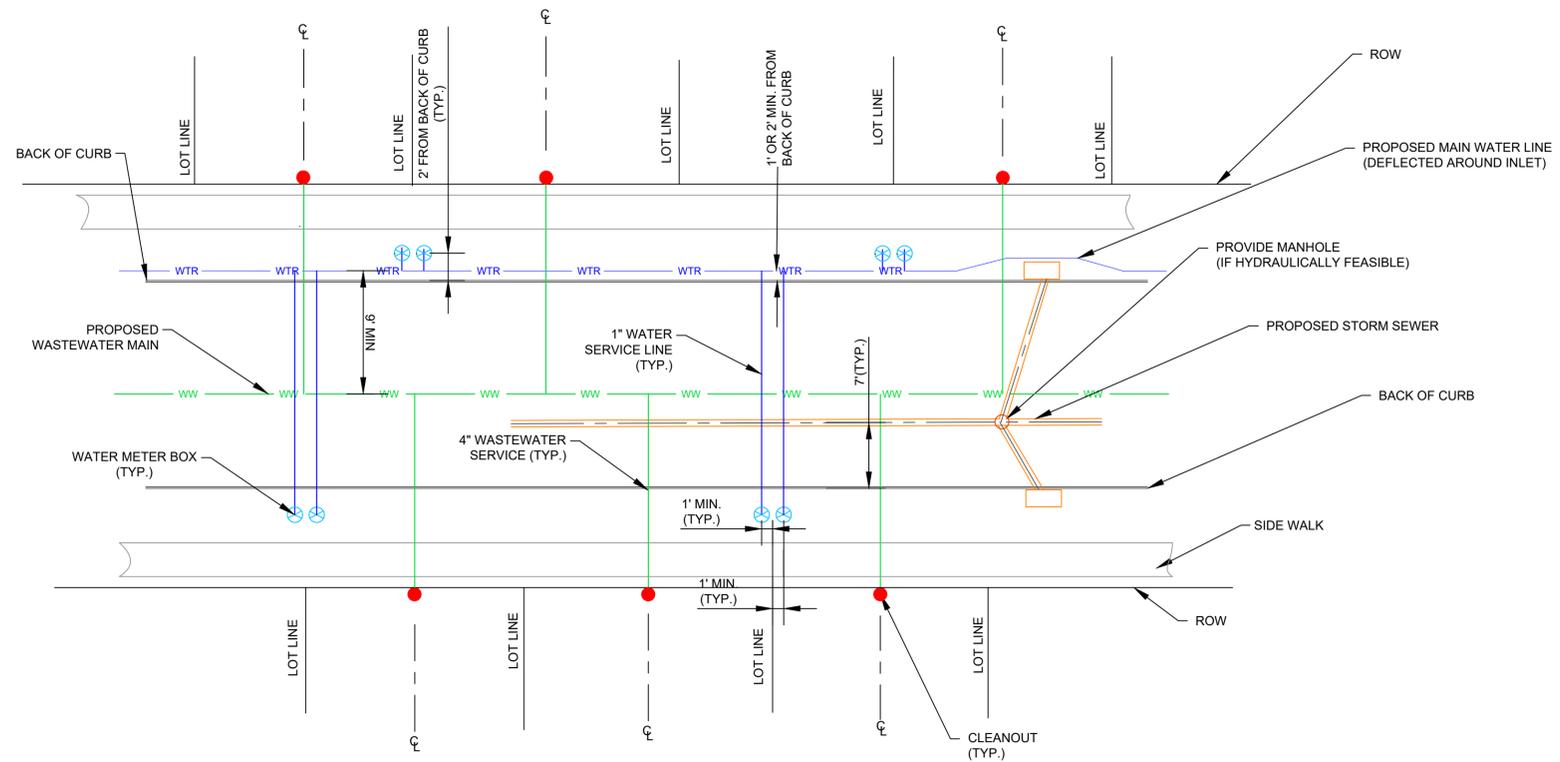


POST X-SECTION

**STANDARD CAPITAL IMPROVEMENT PROJECT SIGN DETAIL**

N.T.S.

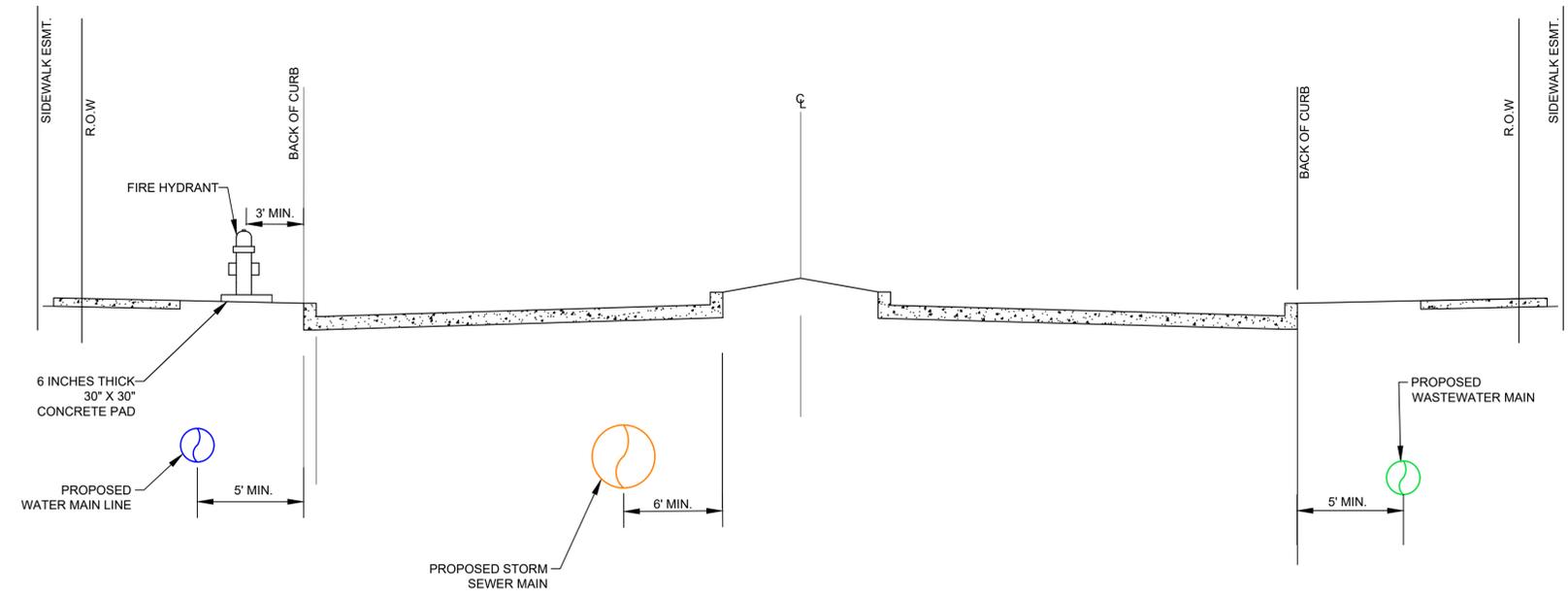
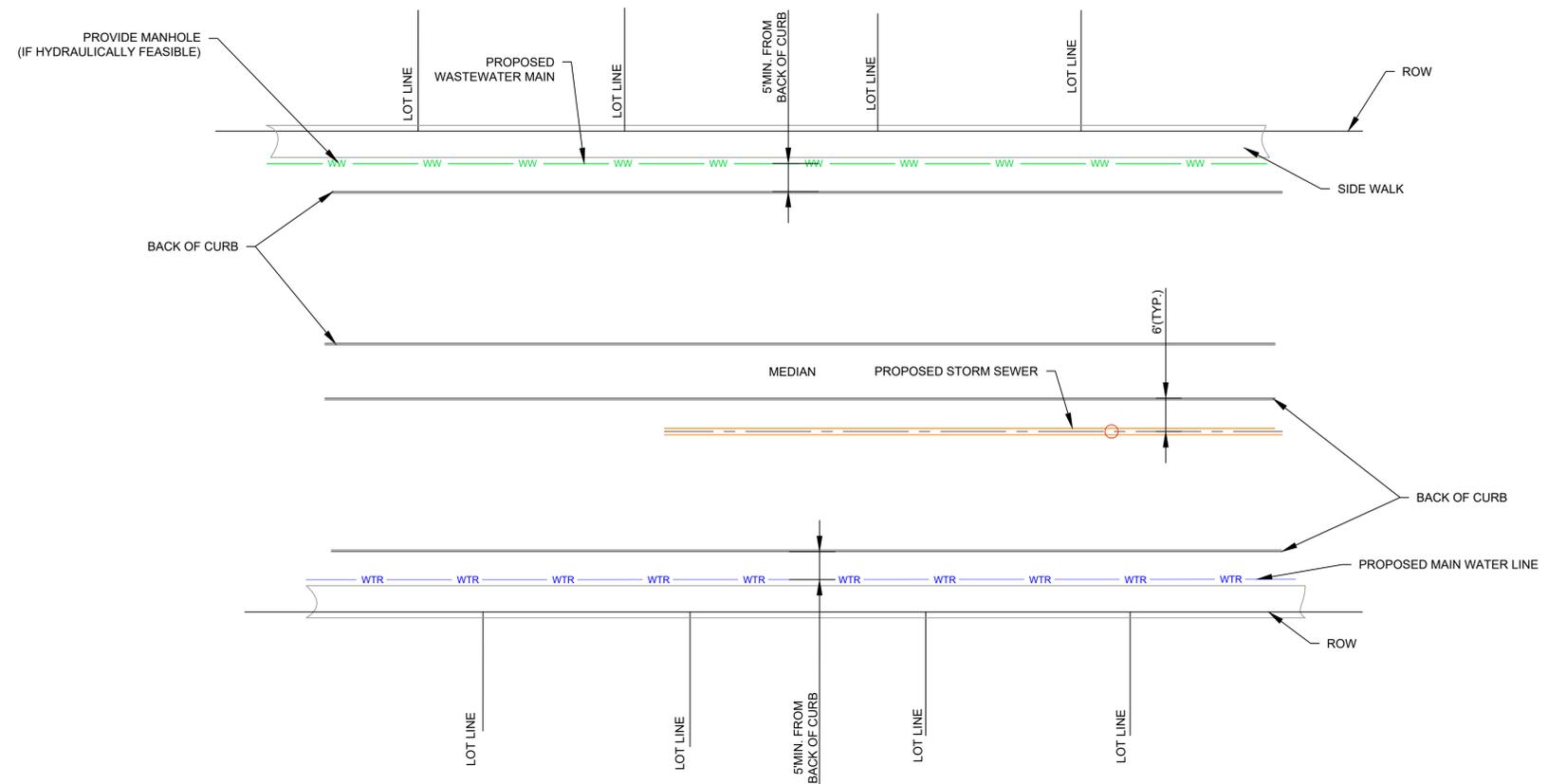
<b>CITY OF CELINA</b>			
<b>PROJECT SIGN DETAILS</b>			
<b>STANDARD DETAILS</b>			
			
DESIGNED BY: C.O	REV. BY	DATE	SYMBOL
C.O			
CHECKED BY: G.J	SCALE: NOT TO SCALE		DATE: JULY 2018
			SHEET NO.: PJS1



MINIMUM REQUIREMENT FOR FIRE HYDRANT AND WATER MAIN INSTALLATION BEHIND BACK OF CURB OF A 50' R.O.W

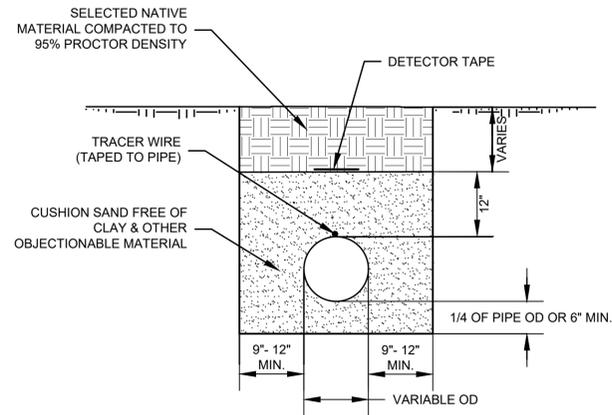
**RESIDENTIAL UTILITY LAYOUT**  
N.T.S.

<b>CITY OF CELINA</b>			
<b>UTILITY LAYOUT DETAILS 1</b>			
<b>STANDARD DETAILS</b>			
			
DESIGNED BY: C.O	REV. BY	DATE	SYMBOL
C.O			
CHECKED BY: K.B	SCALE: NOT TO SCALE		DATE: SEPTEMBER, 2019
			SHEET NO.: UL1

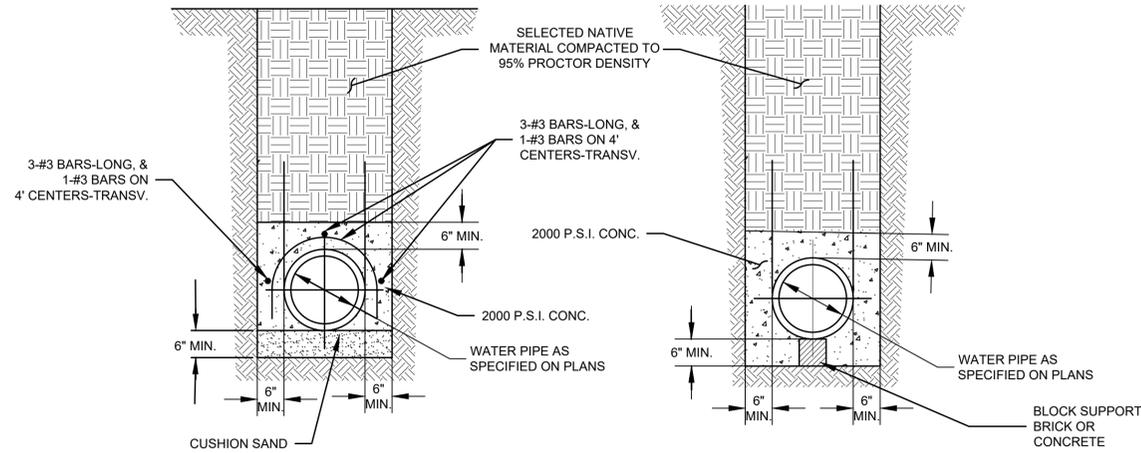


**DIVIDED THOROUGHFARE UTILITY LAYOUT**  
N.T.S.

<b>CITY OF CELINA</b>			
<b>UTILITY LAYOUT DETAILS 2</b>			
<b>STANDARD DETAILS</b>			
			
DESIGNED BY: C.O.	REV. BY	DATE	SYMBOL
CHECKED BY: K.B.	C.O.	SCALE: NOT TO SCALE	DATE: SEPTEMBER, 2019
			SHEET NO.: UL2

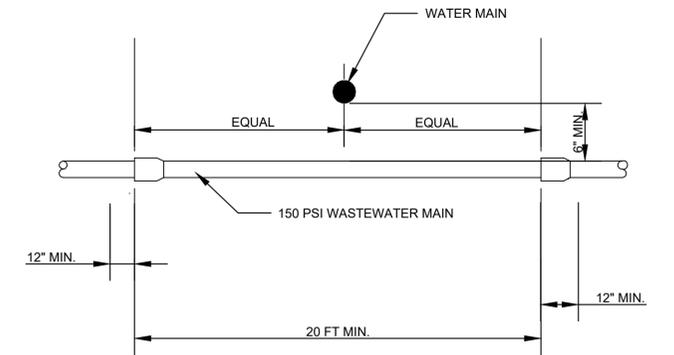


**WATER PIPE EMBEDMENT DETAIL**  
N.T.S.

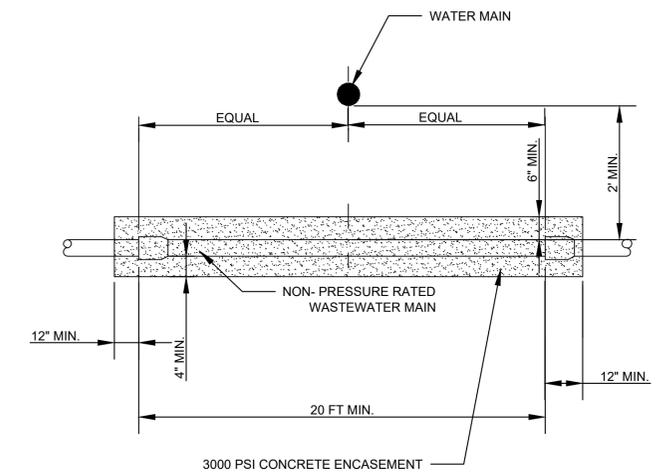


**CAP DETAIL**  
N.T.S.

**ENCASEMENT DETAIL**  
N.T.S.



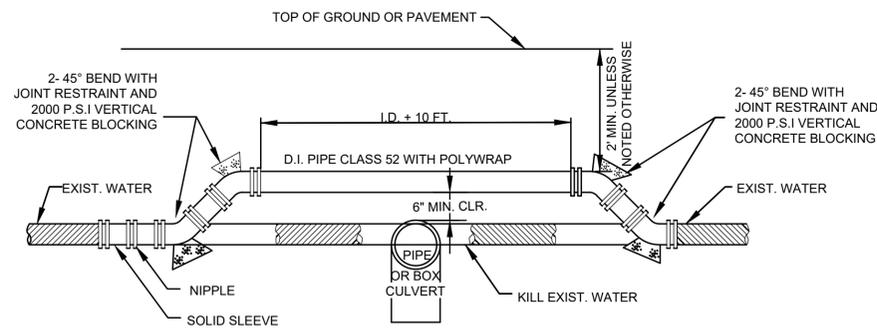
**(PER NOTE 1)**



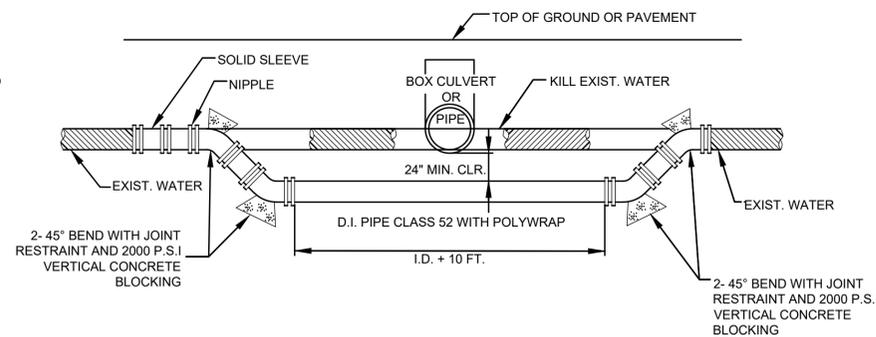
**(PER NOTE 2)**

NOTE:  
WHERE A WATER LINE AND NEW WASTEWATER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (i.e. WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE FOLLOWING REQUIREMENTS:  
1. IF A WASTEWATER LINE CROSSES BELOW A WATER SUPPLY PIPE AND THE FORMER IS CONSTRUCTED OF AT LEAST 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE; THERE SHALL BE AT LEAST SIX INCHES OF VERTICAL SEPARATION BETWEEN THE OUTSIDES OF THE PIPES.  
2. IF A WASTEWATER PIPE CROSSES BELOW A WATER SUPPLY PIPE AND THE FORMER IS CONSTRUCTED OF ANY MATERIAL OTHER THAN AT LEAST 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE THERE SHALL BE AT LEAST TWO FEET OF SEPARATION BETWEEN THE OUTSIDES OF THE PIPES; AND BE ENCASED IN 3000PSI CONCRETE.

**WATER/WASTEWATER CROSSING**



**WATER MAIN ADJUSTMENT ABOVE PIPE**



**WATER MAIN ADJUSTMENT BELOW PIPE**

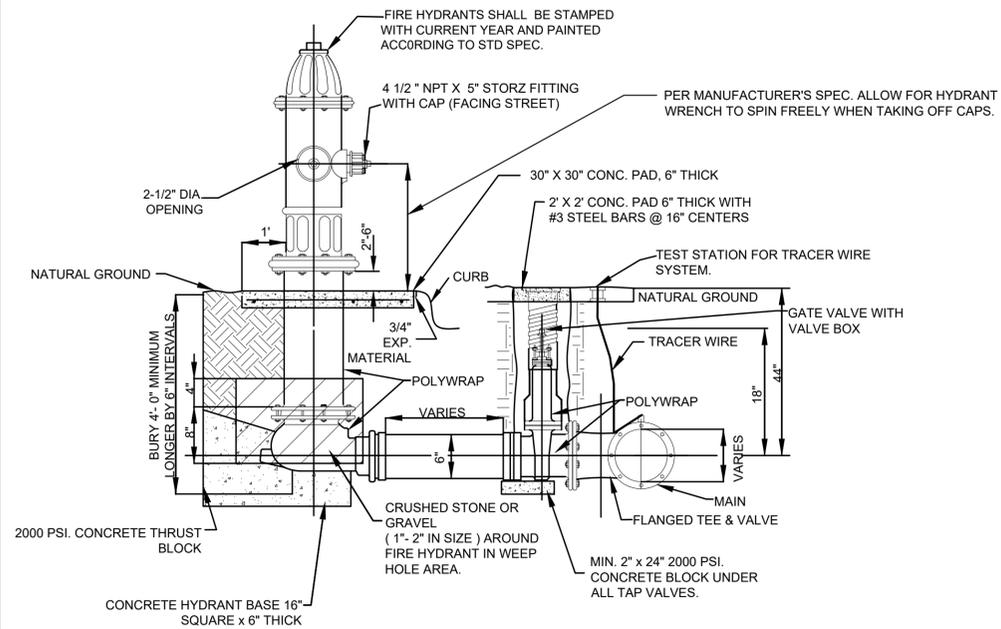
**WATER MAIN ADJUSTMENT DETAILS**

N.T.S.

**CITY OF CELINA  
WATER DETAILS 1  
STANDARD DETAILS**

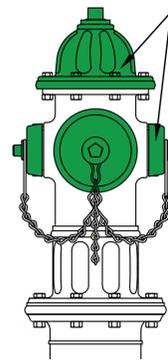


DESIGNED BY: C.O	REV. BY: C.O	DATE:	SYMBOL:	DATE: MAY 2020
CHECKED BY: G.J	SCALE: NOT TO SCALE	SHEET NO.: W1		



**STANDARD FIRE HYDRANT DETAIL**

N.T.S.



PAINT BONNET/CAP ACCORDING TO NOTE 2.

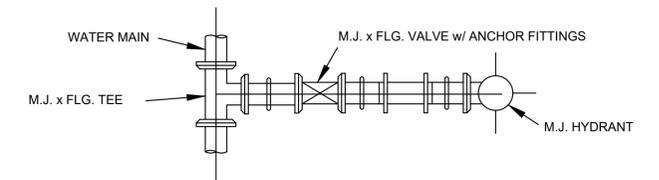
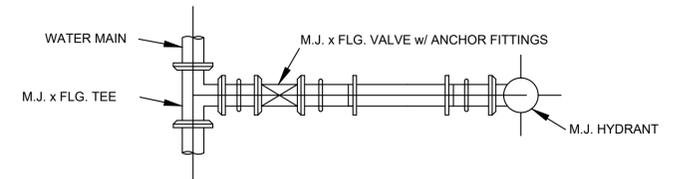
**NOTES:**

- FIRE HYDRANT CAPS AND BONNETS SHALL BE PAINTED WITH TWO (2) COATS ACCORDING TO NFP 291 CHAPTER 3.
 

CLASS C	LESS THAN 500 GALLONS PER MINUTE (GPM)	TNEMEC SERIES 2H-SC09 SAFETY RED
CLASS B	500-999 GALLONS PER MINUTE (GPM)	TNEMEC SERIES 2H-SC03 SAFETY ORANGE
CLASS A	1000-1499 GALONS PER MINUTE (GPM)	TNEMEC SERIES 2H-SC07 SAFETY GREEN
CLASS AA	1500 GALLONS PER MINUTE (GPM) & ABOVE	TNEMEC SERIES 2H-SC06 SAFETY BLUE
- BODY OF THE HYDRANT SHALL BE CHROME ALUMINUM (TNEMEC)

**FIRE HYDRANT COLOR DETAIL**

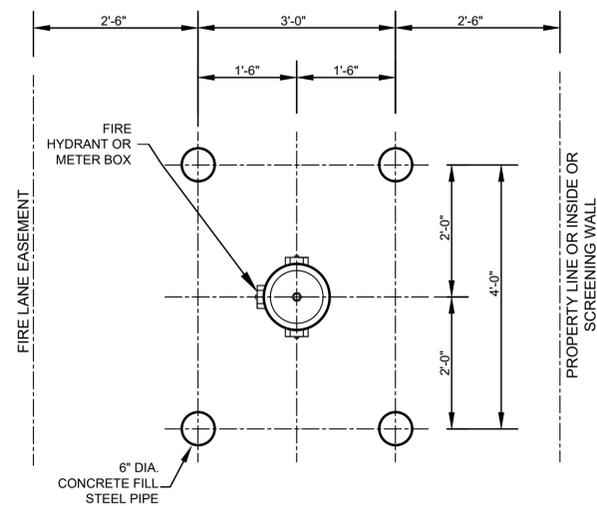
N.T.S.



NOTE:  
1. MAXIMUM OF TWO (2) EXTENSIONS SHALL BE ALLOWED ON FIRE HYDRANTS

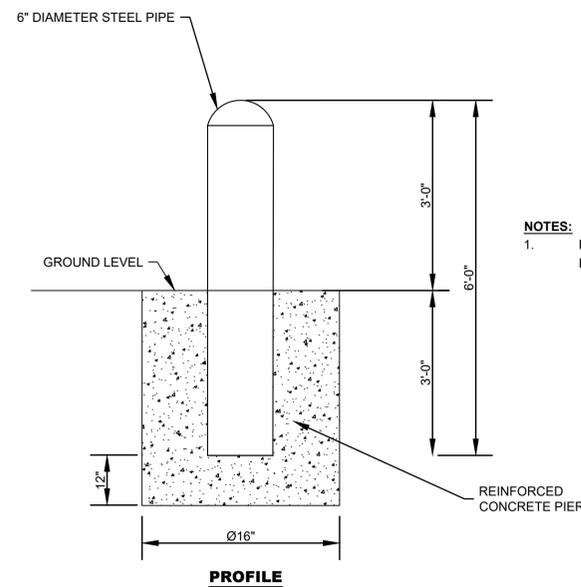
**FIRE HYDRANT INSTALLATION**

N.T.S.



**PIPE BOLLARD**

N.T.S.



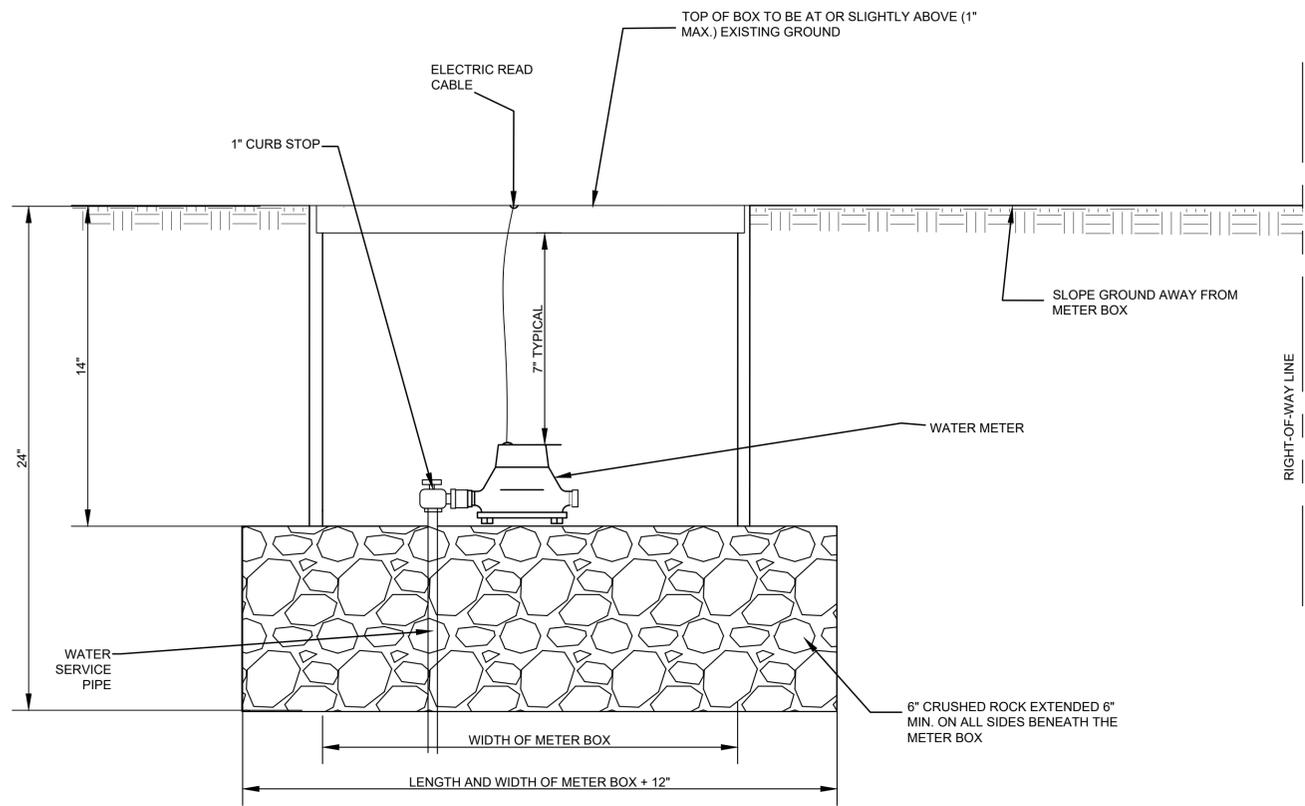
**NOTES:**

- BOLLARDS SHALL BE PAINTED BLACK

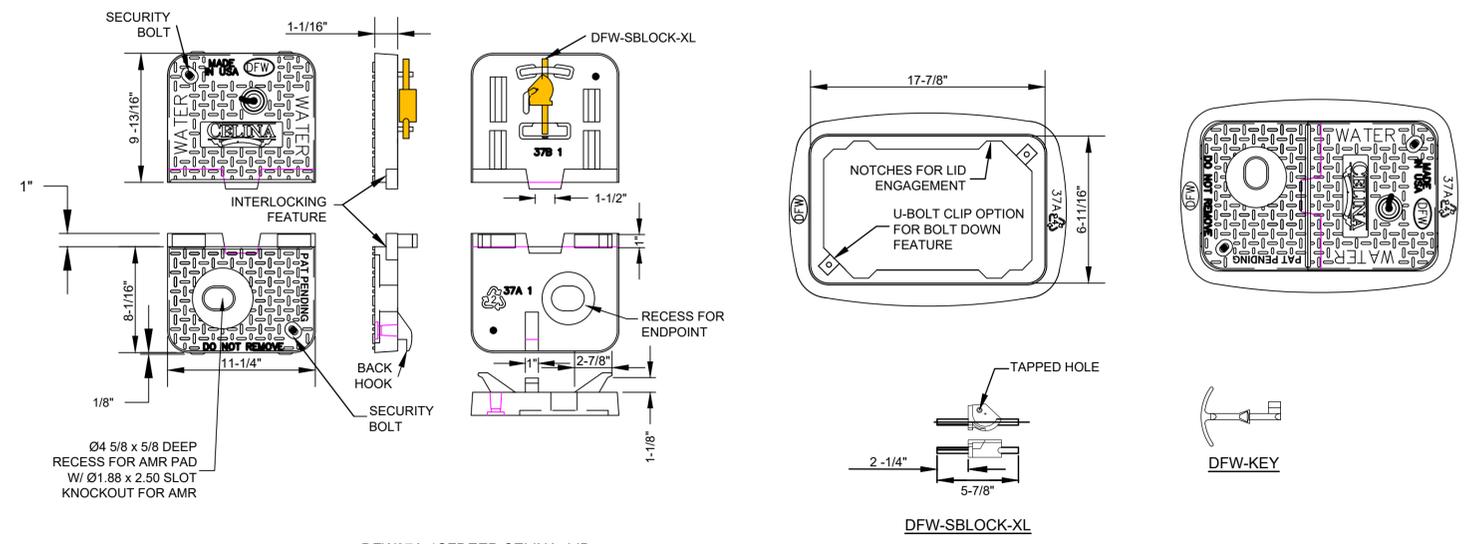
**CITY OF CELINA  
WATER DETAILS 2  
STANDARD DETAILS**



DESIGNED BY: C.O	REV. BY: C.O	DATE:	SYMBOL:	DATE: MAY 2020
CHECKED BY: G.J	SCALE: NOT TO SCALE			SHEET NO.:W2

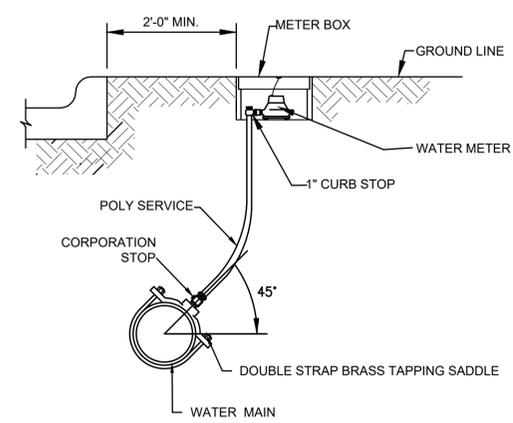


**1" - 2" WATER SERVICE DETAIL**  
N.T.S.

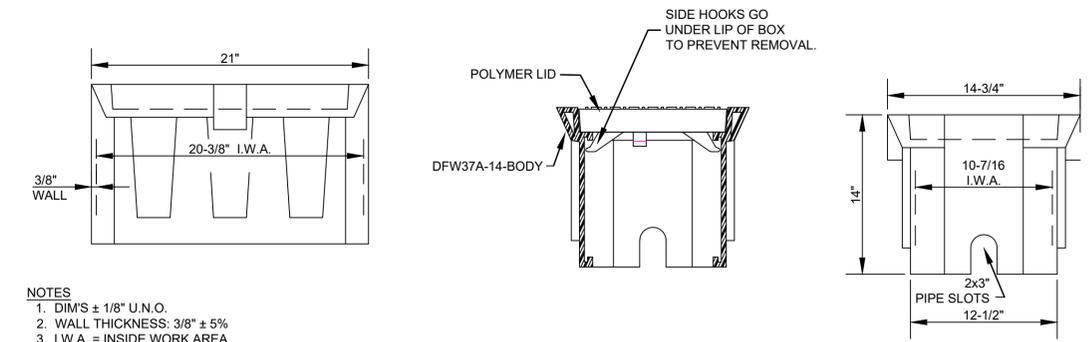


**DFW37A-1SFDEEP CELINA- LID**

- NOTES:  
 1. SEE APPROVED MATERIAL LIST FOR SPECIFIED METER BOX AND LID BASED ON METER SIZE  
 2. METERS 3" AND GREATER SHALL REQUIRE A VAULT



**TYPICAL SERVICE CONNECTION**  
N.T.S.



**DFW37A-14-BODY**

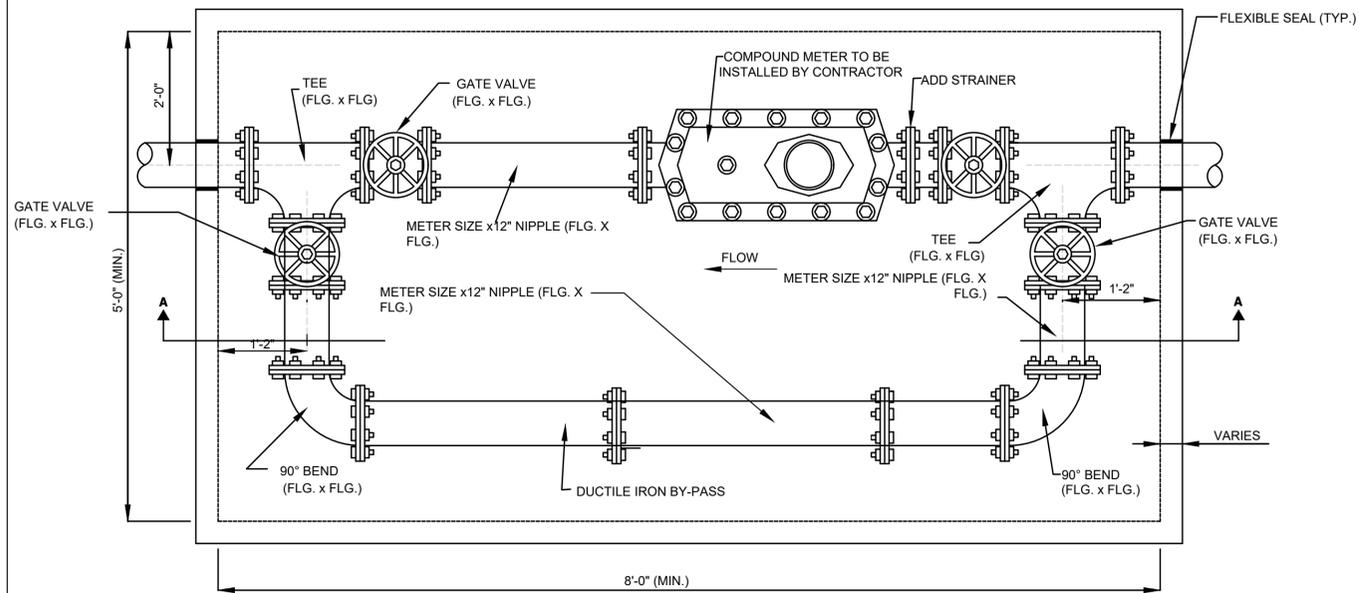
- NOTES  
 1. DIMS ± 1/8" U.N.O.  
 2. WALL THICKNESS: 3/8" ± 5%  
 3. I.W.A. = INSIDE WORK AREA  
 4. BODY MATERIAL: LLDPE  
 5. LID MATERIAL: HDPE

**WATER METER BOX AND LID**  
N.T.S.

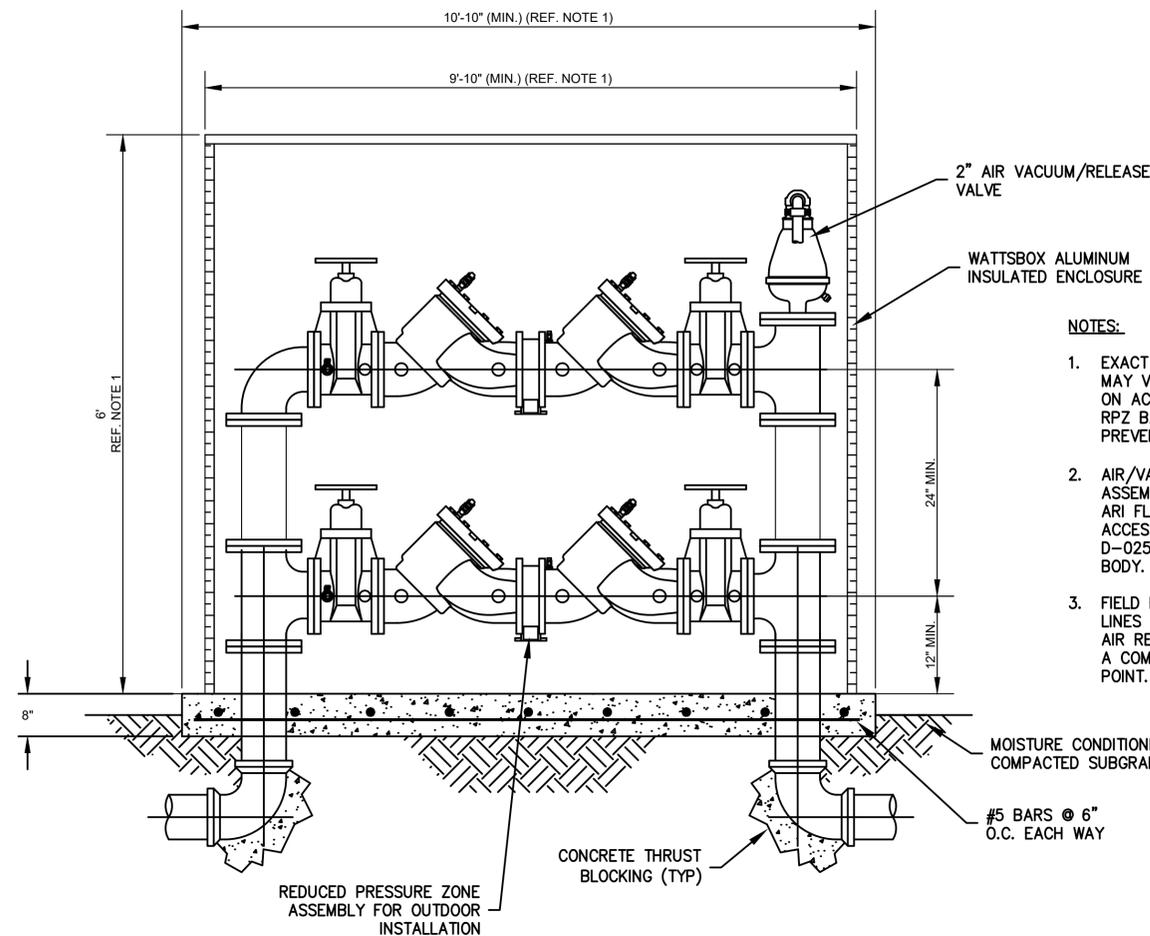
**CITY OF CELINA**  
**WATER DETAILS 3**  
**STANDARD DETAILS**

Life Connected.

DESIGNED BY: C.O	REV. BY	DATE	SYMBOL	DATE: MAY, 2020
CHECKED BY: K.B	C.O			
	SCALE : NOT TO SCALE			SHEET NO.: W3



**PLAN VIEW**



**BACKFLOW PREVENTER (TO BE USED FOR SINGLE WATER FEEDS)**

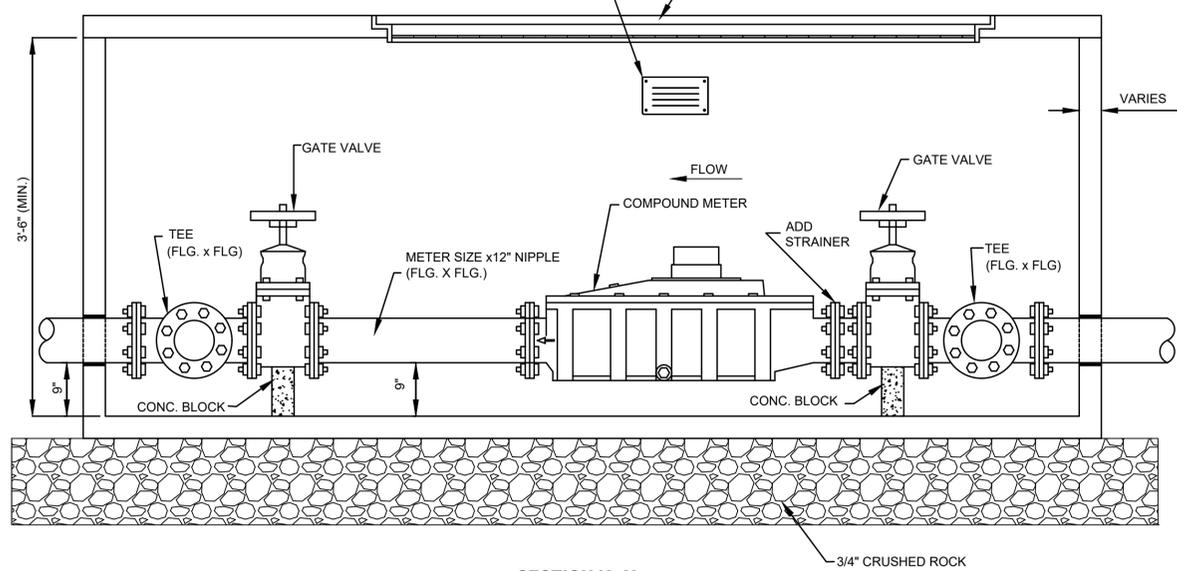
N.T.S.

**NOTES:**

1. EXACT SIZE OF BOX MAY VARY DEPENDING ON ACTUAL LENGTH OF RPZ BACKFLOW PREVENTER.
2. AIR/VACUUM RELEASE ASSEMBLY SHALL BE ARI FLOW CONTROL ACCESSORIES, MODEL D-025, WITH NYLON BODY.
3. FIELD ROUTE DRAIN LINES FROM RPZ AND AIR RELEASE VALVE TO A COMMON DISCHARGE POINT.

NAME PLATE INDICATING:  
MFG:  
PH#  
MODEL: DDBP-GP  
DATE MANUFACTURED  
(SHALL BE MOUNTED ON THE INSIDE OF THE VAULT TO KEEP AS VISIBLE AS POSSIBLE.)

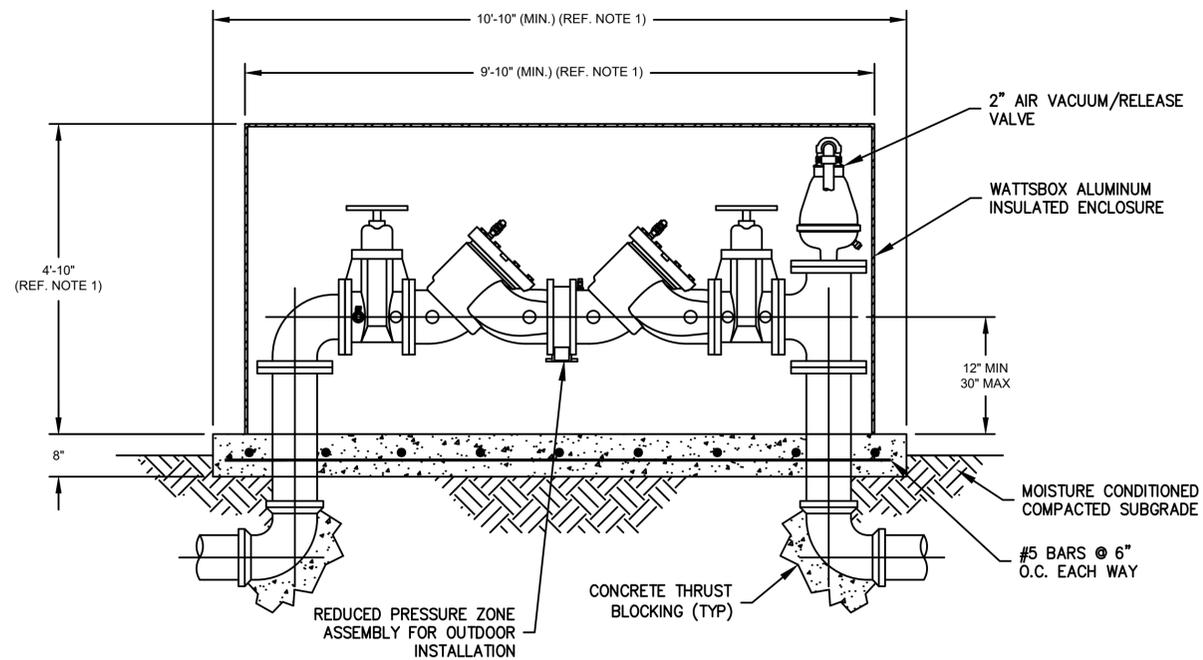
METER BOX DOOR WITH SAFETY GRATING  
(TO BE CENTERED OVER THE METER)



**SECTION 'A-A'**

**WATER METER VAULT**

N.T.S.



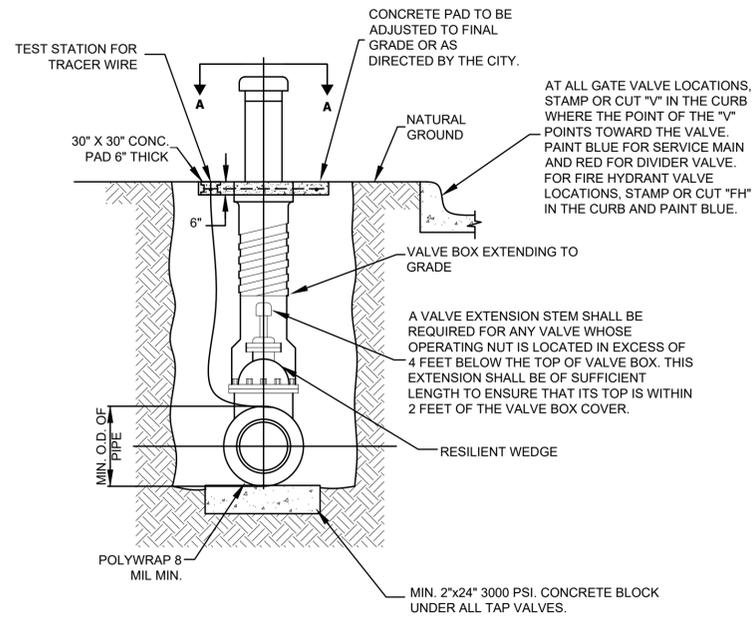
**BACKFLOW PREVENTER**

N.T.S.

**CITY OF CELINA  
WATER DETAILS 5  
STANDARD DETAILS**

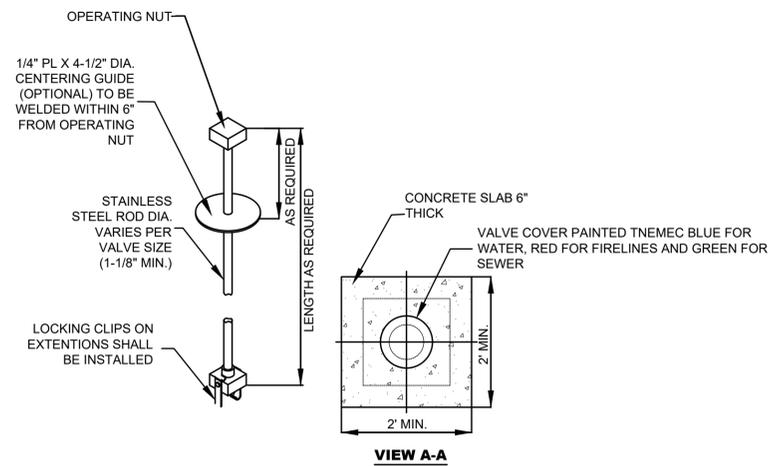


DESIGNED BY: C.O	REV. BY: C.O	DATE:	SYMBOL:	DATE: MAY, 2020
CHECKED BY: K.B	SCALE: NOT TO SCALE			SHEET NO.: W5

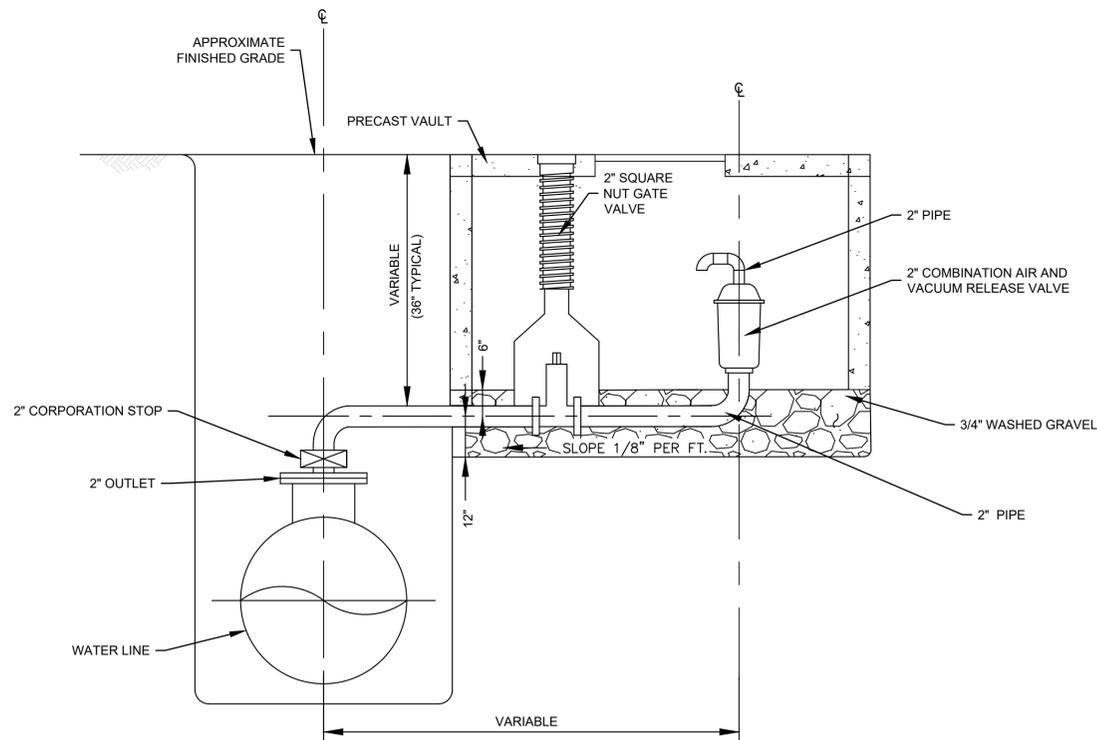


**TYPICAL GATE VALVE SETTING AND BOX**

N.T.S.



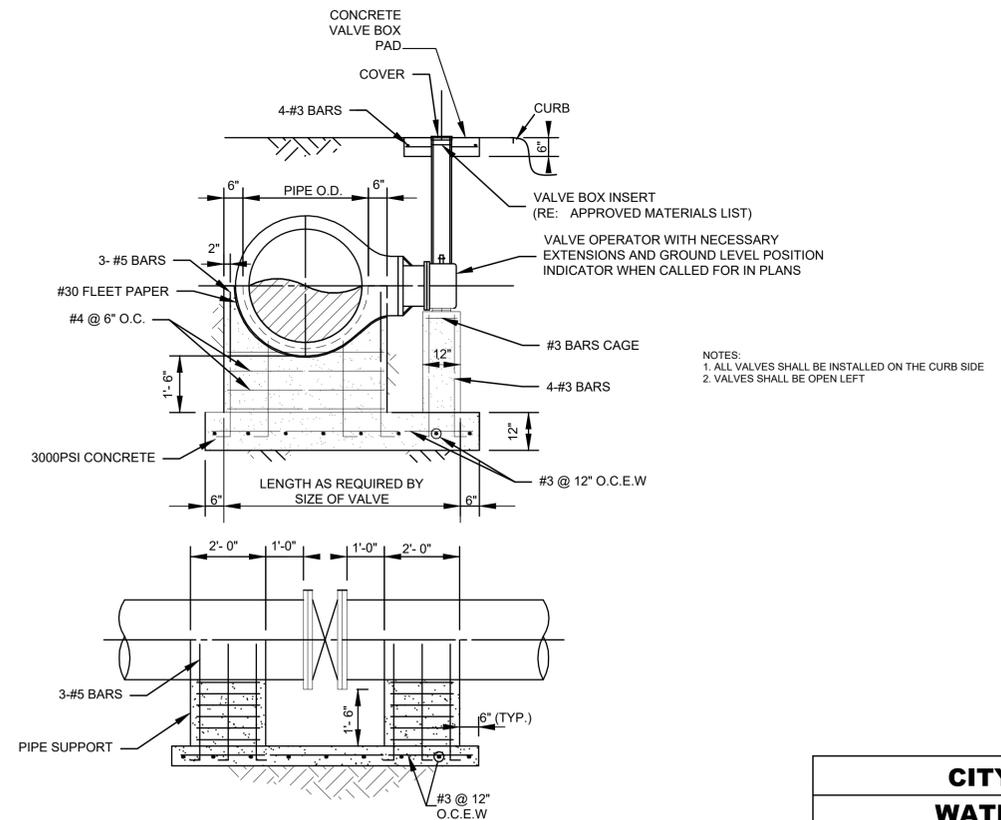
**GATE VALVE EXTENSION STEM**



**COMBINATION AIR AND VACUUM RELEASE**

**VALVE AND VAULT DETAIL**

N.T.S.



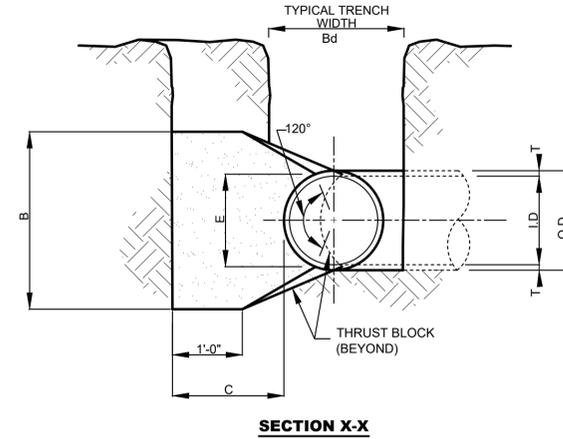
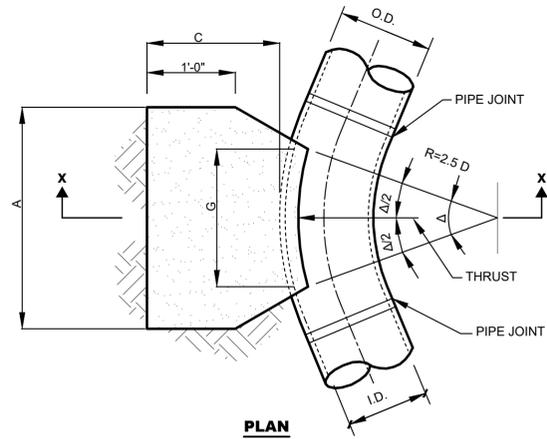
**BUTTERFLY VALVE**

N.T.S.

**CITY OF CELINA  
WATER DETAILS 4  
STANDARD DETAILS**



DESIGNED BY: C.O	REV. BY	DATE	SYMBOL	DATE: MAY, 2020
CHECKED BY: K.B	C.O			SHEET NO.: W4
SCALE: NOT TO SCALE				



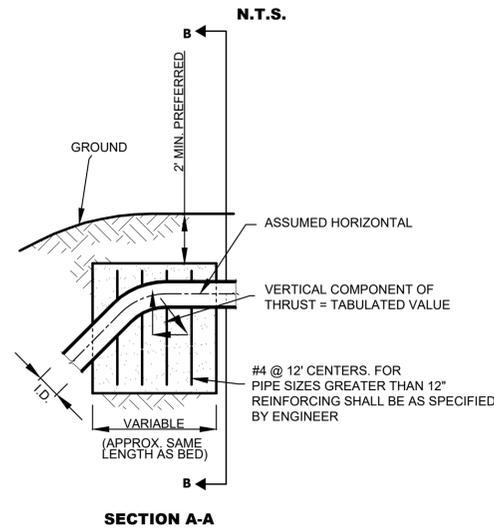
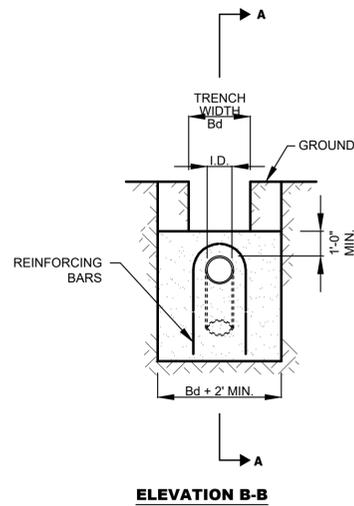
I.D. (IN.)	T (IN.)	$\Delta \geq 22.50^\circ$ C (IN.)	E (IN.)
4,6,8	0.4	1.5	0.9
10,12	0.5	1.5	1.2
16,18	0.6	1.5	1.6
20	0.7	1.5	1.8
24	0.9	1.5	2.1
30	2.9	1.9	2.6
36	4.5	2.3	3.3
42	5.0	2.6	3.8
48	5.5	3.0	4.3
54	6.0	3.4	4.8
60	6.5	3.8	5.3
66	6.8	4.1	5.7
72	7.5	4.5	6.3
78	7.5	4.9	6.7
84	8.0	5.3	7.2
90	8.5	5.6	7.7
96	9.0	6.0	8.2

I.D. (IN.)	G (FT.)	THRUST TONS	$\Delta = 22.50^\circ$					
			EARTH			ROCK		
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	0.8	2.0	1.5	1.5	0.1	1.0	1.0	0.1
10,12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1
16,18	1.6	9.9	3.0	3.5	0.6	2.0	2.5	0.3
20	1.8	12.3	3.5	3.5	0.7	2.0	3.0	0.4
24	2.2	17.7	4.0	4.5	1.0	3.0	3.5	0.5
30	2.7	20.7	5.0	4.5	1.5	3.0	4.0	0.8
36	3.3	29.8	5.5	5.5	2.3	4.0	4.0	1.3
42	3.8	40.5	7.0	6.0	3.9	4.5	5.0	2.1
48	4.4	52.9	8.0	7.0	5.7	4.5	6.0	2.8
54	4.9	67.0	9.0	8.0	8.0	6.0	6.0	4.1
60	5.5	82.7	9.5	9.0	10.6	6.0	7.0	5.3
66	6.0	100.1	10.5	10.0	14.1	6.5	8.0	7.2
72	6.6	119.1	11.0	11.0	17.6	7.5	8.0	9.1
78	7.1	139.8	12.0	12.0	22.5	8.0	9.0	11.7
84	7.5	162.1	13.0	12.5	27.2	8.5	10.0	14.8
90	8.2	186.0	14.0	13.5	33.7	9.5	10.0	17.7
96	8.7	211.7	15.0	14.5	41.2	10.0	11.0	21.8

I.D. (IN.)	G (FT.)	THRUST TONS	$\Delta = 45^\circ$					
			EARTH			ROCK		
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	1.5	3.9	2.0	2.0	0.2	1.5	1.5	0.1
10,12	2.2	8.7	3.5	2.5	0.5	2.0	2.5	0.3
16,18	3.2	19.5	4.5	4.5	1.2	3.0	3.5	0.6
20	3.6	24.1	5.5	4.5	1.5	3.5	3.5	0.7
24	4.3	34.6	8.0	4.5	2.3	4.5	4.0	1.1
30	5.4	40.6	8.5	5.0	3.2	5.5	4.0	1.6
36	6.5	58.5	10.0	6.0	5.3	6.5	4.5	2.6
42	7.5	79.6	11.5	7.0	6.1	8.0	5.0	4.2
48	8.6	104.0	13.0	8.0	11.9	9.0	6.0	6.3
54	9.7	131.5	15.0	9.0	17.1	10.5	6.5	8.9
60	10.7	162.4	16.5	10.0	23.1	11.0	7.5	12.0
66	11.8	196.5	18.0	11.0	30.1	12.0	8.5	16.2
72	12.9	233.9	19.5	12.0	38.6	14.0	8.5	20.7
78	13.9	274.5	21.5	13.0	49.8	14.5	9.5	25.9
84	15.0	318.4	23.0	14.0	61.2	15.5	10.5	32.6
90	16.1	365.5	24.5	15.0	74.5	17.5	10.5	39.6
96	17.1	415.6	26.0	16.0	89.5	18.5	11.5	48.5

I.D. (IN.)	G (FT.)	THRUST TONS	$\Delta = 90^\circ$					
			EARTH			ROCK		
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	2.7	7.1	5.0	1.5	0.4	2.0	1.5	0.2
10,12	4.0	16.0	6.5	2.5	1.0	3.5	2.5	0.5
16,18	6.0	36.0	9.0	4.0	2.4	4.5	4.0	1.0
20	6.6	44.4	10.0	4.5	3.1	6.0	4.0	1.5
24	7.9	64.0	14.5	4.5	5.0	8.0	4.0	2.1
30	9.9	75.0	15.0	5.0	6.7	10.0	4.0	3.3
36	11.9	109.0	18.0	6.0	11.4	12.0	4.5	5.3
42	13.9	147.0	21.0	7.0	17.8	14.0	5.5	8.7
48	15.9	192.0	24.0	8.0	26.2	16.0	6.0	12.4
54	17.9	243.0	27.0	9.0	36.9	18.0	7.0	18.1
60	19.9	299.8	30.0	10.0	50.3	20.0	7.5	24.0
66	21.8	362.8	33.0	11.0	66.2	22.0	8.5	32.5
72	23.8	431.8	36.0	12.0	85.6	24.0	9.0	41.0
78	25.7	506.7	39.0	13.0	108.2	26.0	10.0	53.2
84	27.7	587.7	42.0	14.0	134.4	28.0	10.5	64.8
90	29.0	674.6	45.0	15.0	164.9	30.0	11.5	81.2
96	31.6	767.5	48.0	16.0	199.0	32.0	12.0	95.1

### HORIZONTAL THRUST BLOCK AT PIPE BEND



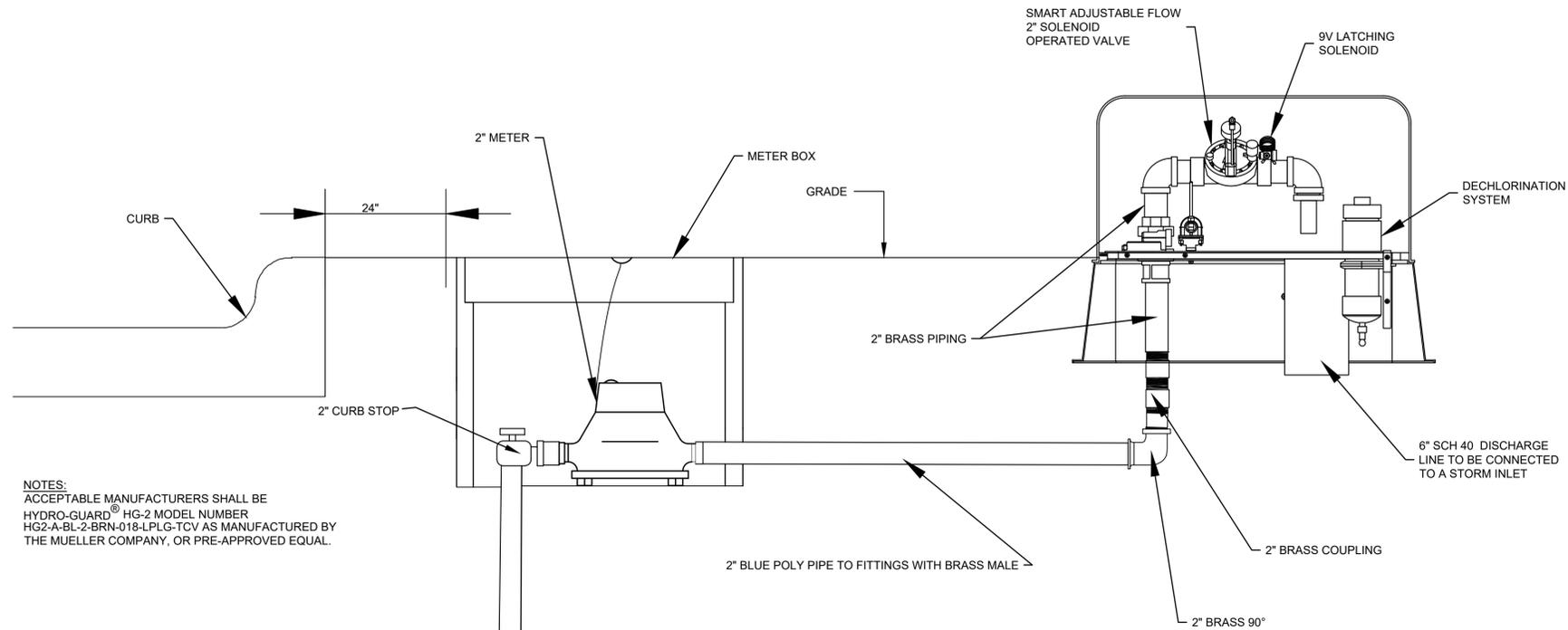
I.D. (IN.)	$\Delta = 22.5^\circ$		$\Delta = 45^\circ$		$\Delta = 90^\circ$		I.D. (IN.)
	THRUST TONS	VOL. (C.Y.)	THRUST TONS	VOL. (C.Y.)	THRUST TONS	VOL. (C.Y.)	
4,6,8	2.0	1.0	3.6	1.8	5.0	2.5	4,6,8
10,12	4.3	2.2	8.0	4.0	11.3	5.7	10,12
16,18	9.7	4.9	18.0	9.0	25.5	12.7	16,18
20	12.0	6.0	22.2	11.1	31.4	15.7	20
24	17.3	8.7	32.0	16.0	45.2	22.6	24
30	20.3	10.1	37.5	18.8	53.1	26.5	30
36	29.2	14.6	54.0	27.0	76.4	38.2	36
42	39.8	19.9	73.5	36.7	104.0	52.0	42
48	51.9	26.0	96.0	48.0	136.0	67.9	48
54	65.7	32.9	122.0	60.7	172.0	85.9	54
60	81.2	40.6	150.0	75.0	212.0	106.0	60
66	98.2	49.1	182.0	90.7	257.0	128.0	66
72	117.0	58.4	216.0	108.0	305.0	153.0	72
78	137.0	68.6	254.0	127.0	358.0	179.0	78
84	159.0	79.5	294.0	147.0	416.0	208.0	84
90	183.0	91.3	337.0	169.0	477.0	239.0	90
96	208.0	104.0	384.0	192.0	543.0	272.0	96

### VERTICAL THRUST BLOCK AT PIPE BEND

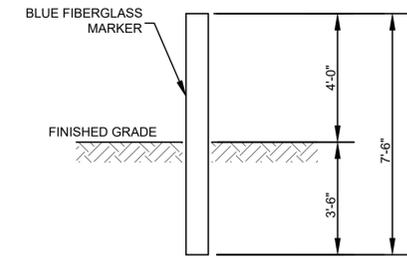
**CITY OF CELINA**  
**WATER DETAILS 6**  
**STANDARD DETAILS**

  
Life Connected.

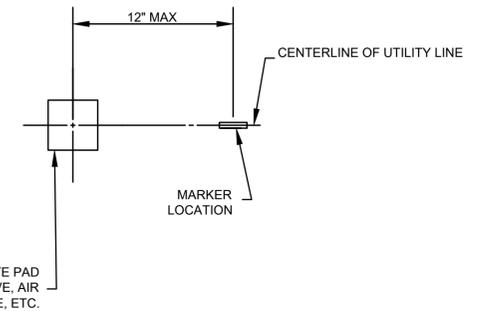
DESIGNED BY: C.O.	REV. BY	DATE	SYMBOL	DATE: SEPTEMBER, 2019
CHECKED BY: K.B.	C.O.			SHEET NO.: W6
SCALE: NOT TO SCALE				



NOTES:  
ACCEPTABLE MANUFACTURERS SHALL BE  
HYDRO-GUARD® HG-2 MODEL NUMBER  
HG2-A-BL-2-BRN-018-LPLG-TCV AS MANUFACTURED BY  
THE MUELLER COMPANY, OR PRE-APPROVED EQUAL.

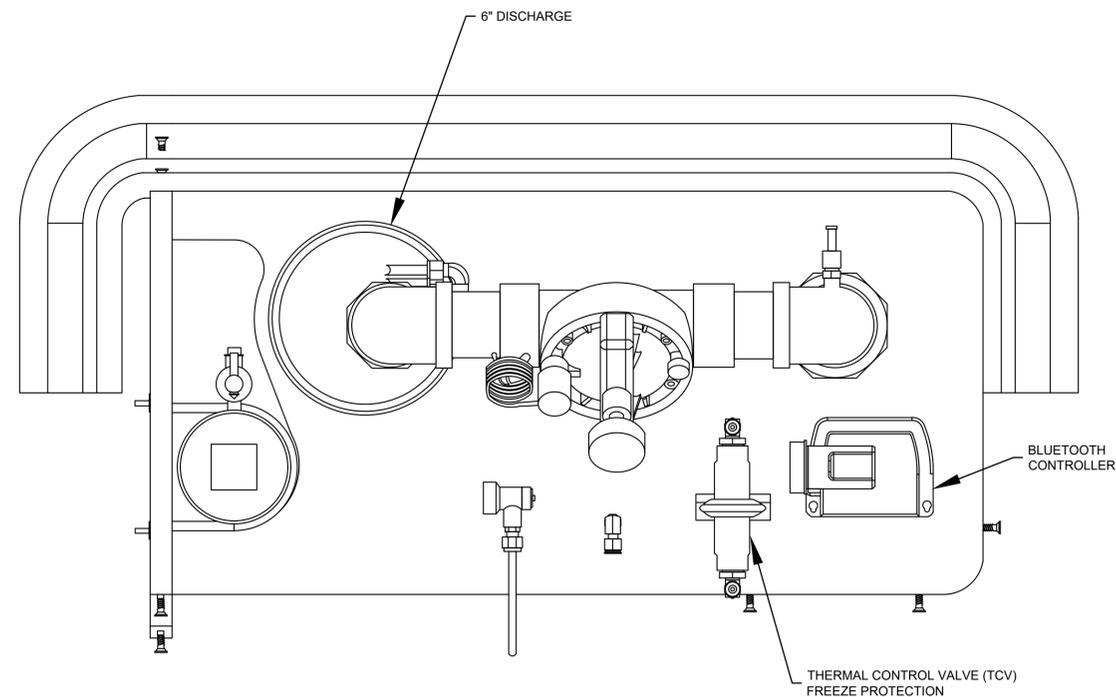


ELEVATION



FIELD INSTALLATION DETAIL

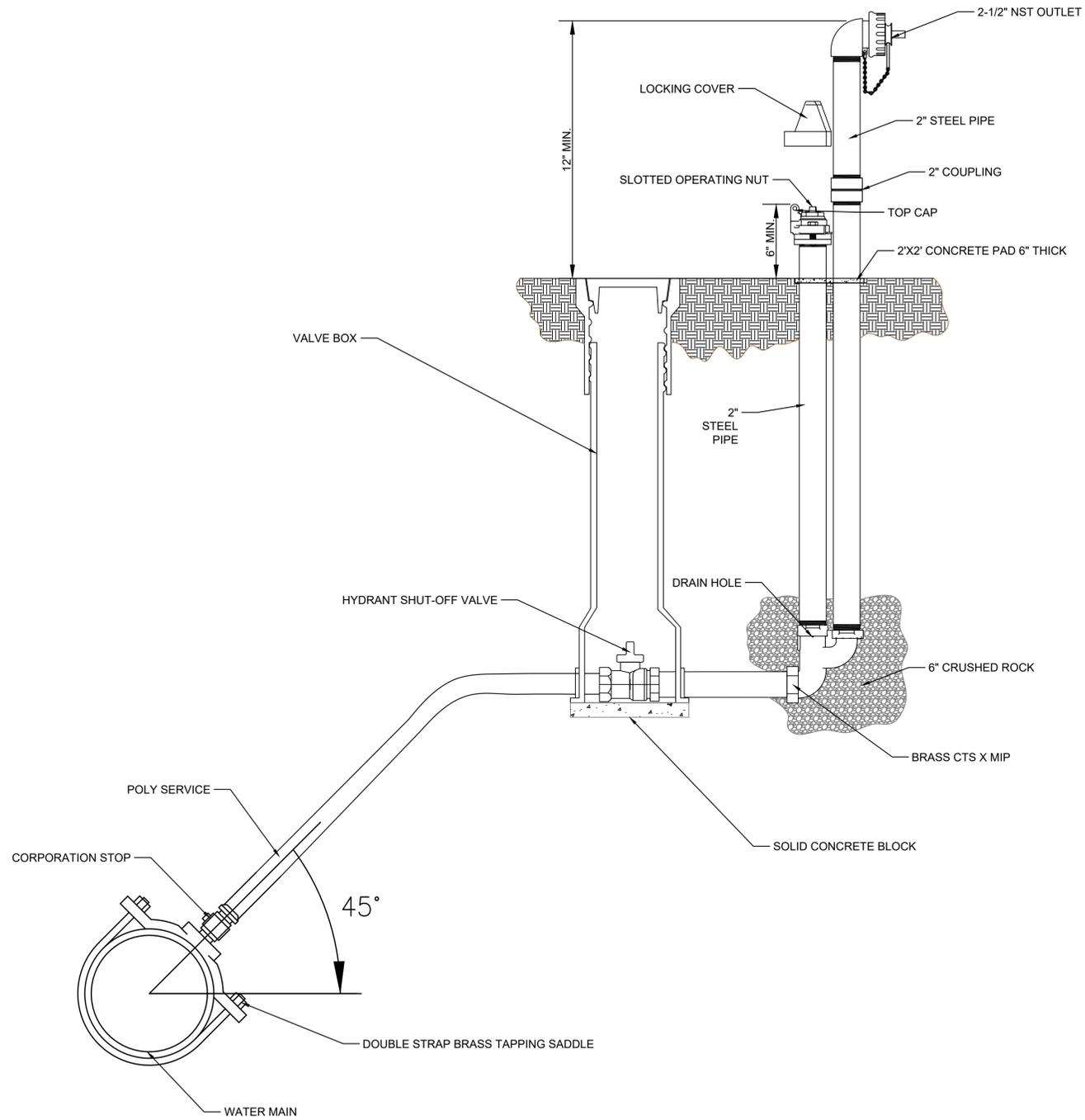
**OFFSITE WATER MAIN MARKER**  
N.T.S.



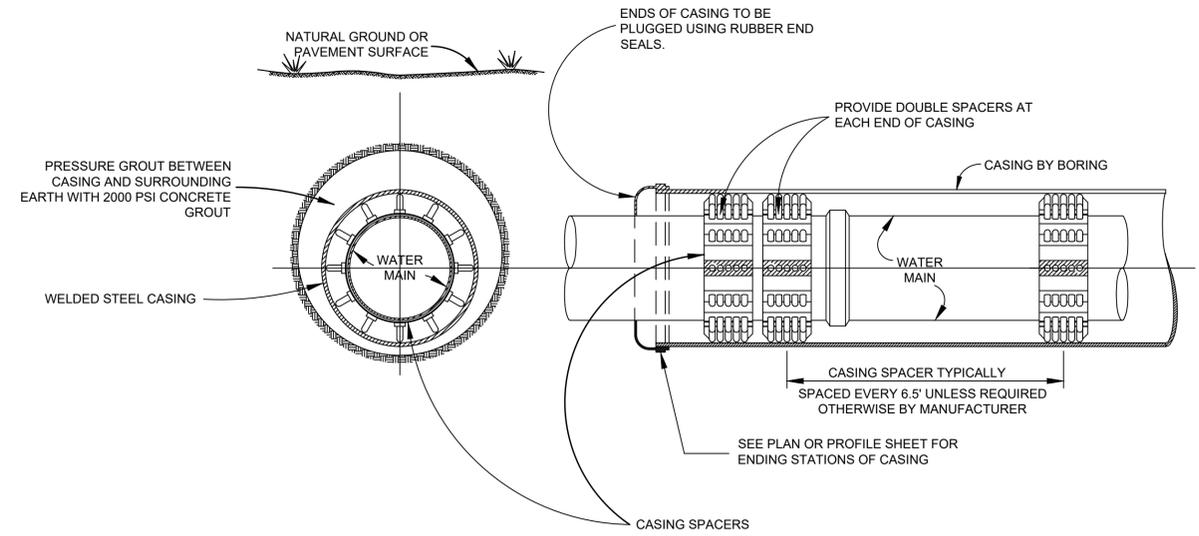
PLAN VIEW

**AUTOMATIC WATER DISTRIBUTION FLUSHING EQUIPMENT**  
N.T.S.

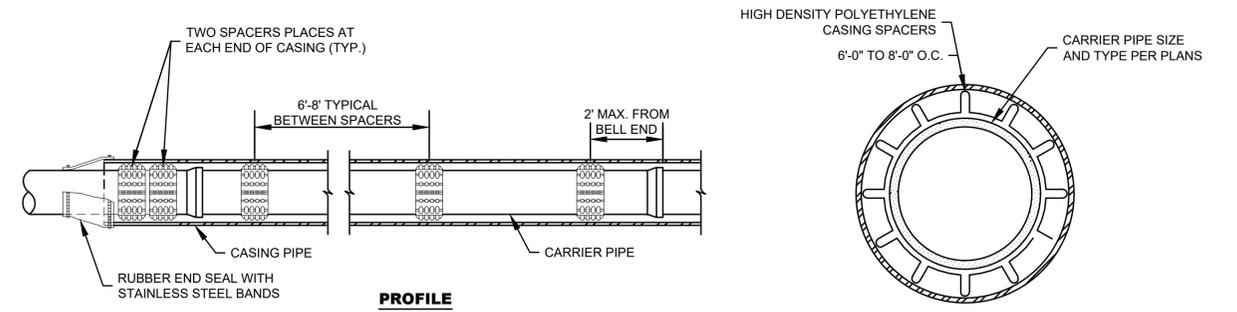
<b>CITY OF CELINA</b>				
<b>WATER DETAILS 7</b>				
<b>STANDARD DETAILS</b>				
 Life Connected.				
DESIGNED BY: C.O	REV. BY	DATE	SYMBOL	DATE: MAY, 2020
CHECKED BY: K.B	C.O			
SCALE: NOT TO SCALE			SHEET NO.: W7	



**POST HYDRANT TO BE INSTALLED AT TEMPORARY WATER MAIN DEAD ENDS**

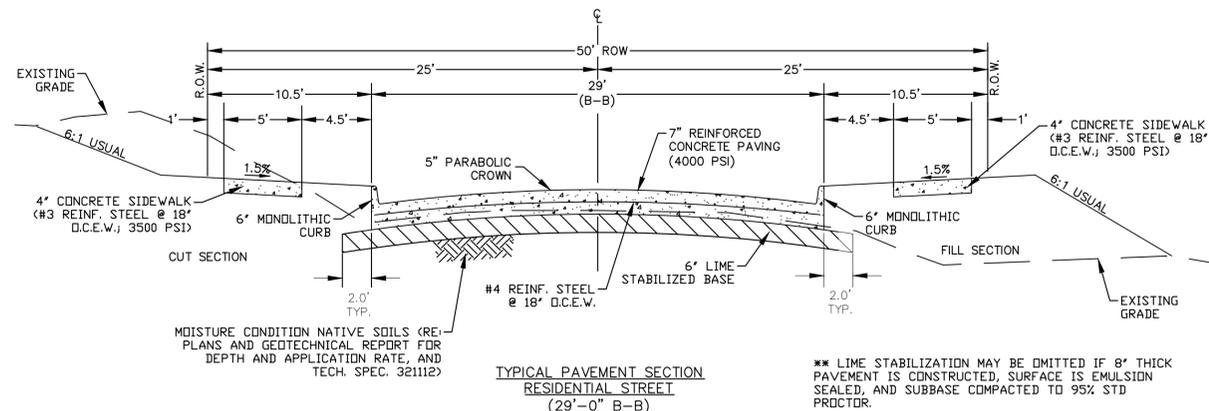


**BORING DETAIL**  
N.T.S.

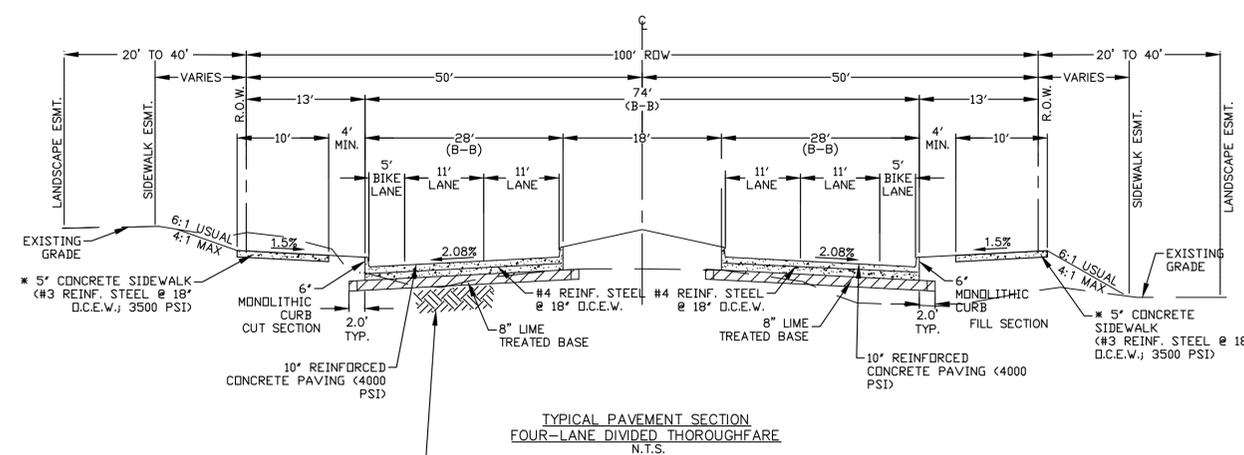


**CASING SPACER DETAIL**  
N.T.S.

<b>CITY OF CELINA</b>			
<b>WATER DETAILS 8</b>			
<b>STANDARD DETAILS</b>			
 Life Connected.			
DESIGNED BY: C.O	REV. BY: C.O	DATE: MAY, 2020	SYMBOL: W8
CHECKED BY: K.B	SCALE: NOT TO SCALE	SHEET NO.: W8	



TYPICAL PAVEMENT SECTION  
RESIDENTIAL STREET  
(29'-0" B-B)  
N.T.S.



TYPICAL PAVEMENT SECTION  
FOUR-LANE DIVIDED THOROUGHFARE  
N.T.S.

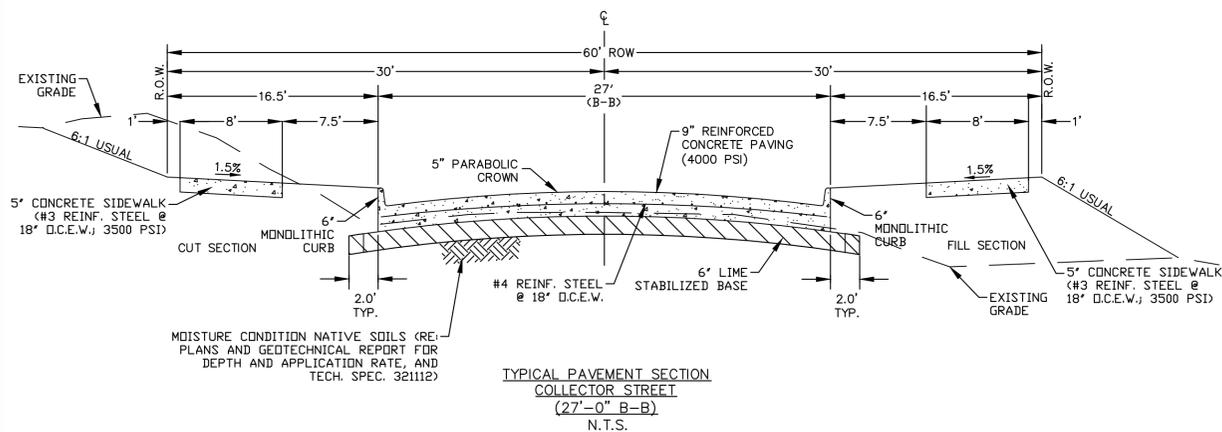
PAVEMENT NOTES:

- 4000 PSI REINFORCED CONCRETE PAVEMENT (5.5 SACK/CY), NO. 4 BARS @ 18" O.C.E.W., WITH 6" MONOLITHIC CURB.
- BAR LAPS SHALL BE 30 BAR DIAMETERS.
- BAR CHAIRS SHALL BE PROVIDED BY CONTRACTOR.
- DO NOT PLACE CONCRETE JOINT WITHIN 2 FEET OF GUTTER LINE AT STREET CONNECTION.
- LIME SHALL BE APPLIED BY PERCENTAGE DRY UNIT WEIGHT OF SOIL TREATED TO A MINIMUM IN PLACE COMPACTED THICKNESS OF SIX (6) INCHES FOR RESIDENTIAL AND COLLECTOR STREETS AND EIGHT (8) INCHES FOR THOROUGHFARES. FOR 6" THICK SECTION, MINIMUM LIME APPLICATION IS 37 LBS/SQ FT; FOR 8" THICK SECTION, MINIMUM LIME APPLICATION IS 54 LBS/SQ FT.

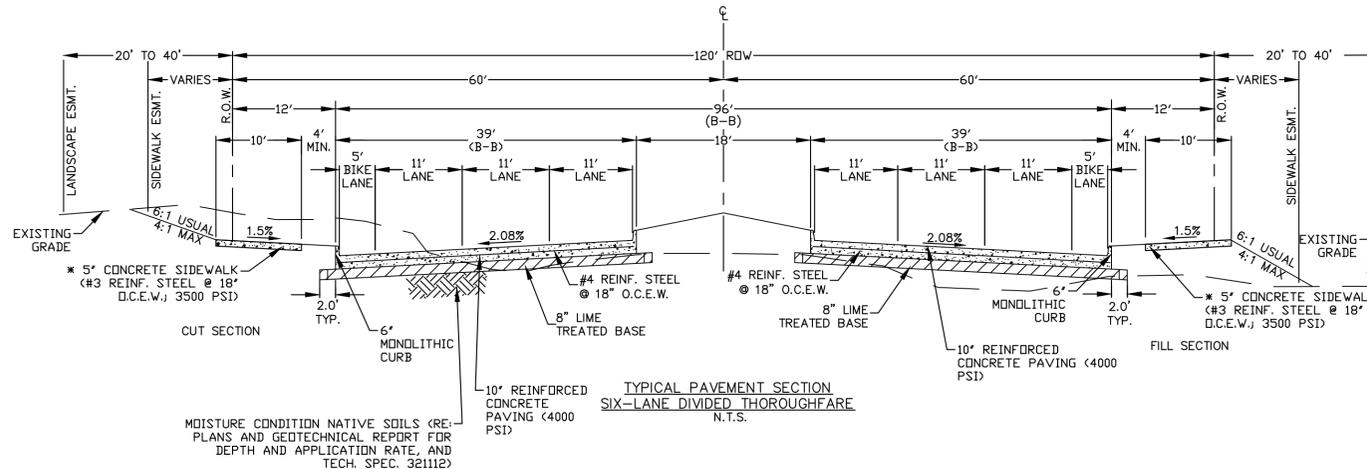
PAVEMENT NOTES (CONTINUE):

- FORMING OF PAVEMENT:
  - SLIP-FORM: SLIP-FORM PAVEMENT METHOD SHALL BE USED FOR ALL PUBLIC STREETS AND ALLEYS UNLESS OTHERWISE APPROVED BY THE TOWN ENGINEER.
  - HAND FORM: HAND FORMED PAVEMENT METHOD MAY BE USED FOR TURN LANE, DECELERATION LANE, DRIVEWAY APPROACH, OR REPLACING A PANEL OF PUBLIC STREET OR ALLEY. HAND Poured PAVEMENTS SHALL BE 4500PSI REINFORCED CONCRETE.

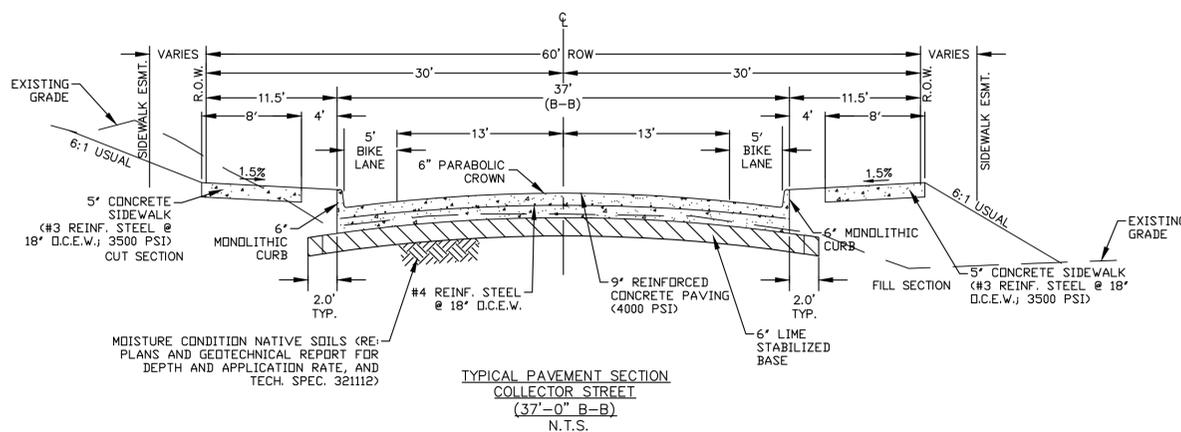
\*\* LIME STABILIZATION MAY BE OMITTED IF 8" THICK PAVEMENT IS CONSTRUCTED, SURFACE IS EMULSION SEALED, AND SUBBASE COMPACTED TO 95% STD PROCTOR.



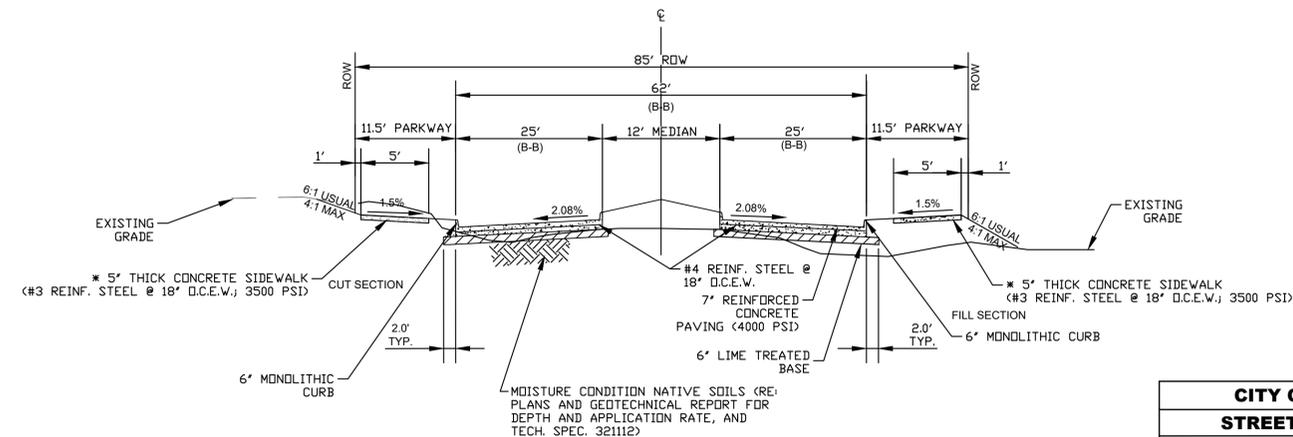
TYPICAL PAVEMENT SECTION  
COLLECTOR STREET  
(27'-0" B-B)  
N.T.S.



TYPICAL PAVEMENT SECTION  
SIX-LANE DIVIDED THOROUGHFARE  
N.T.S.

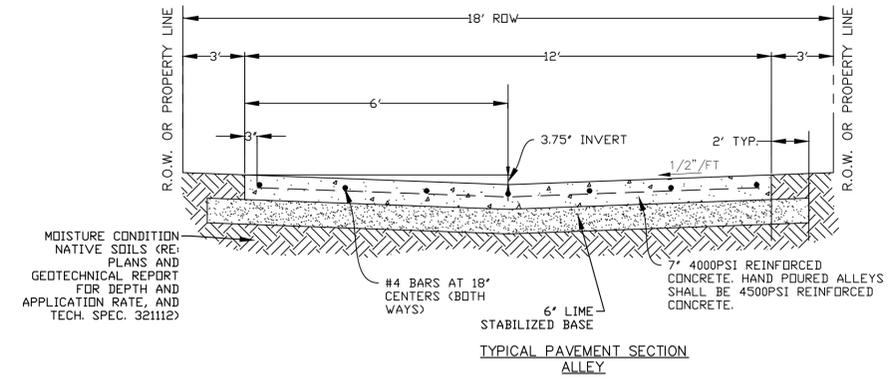
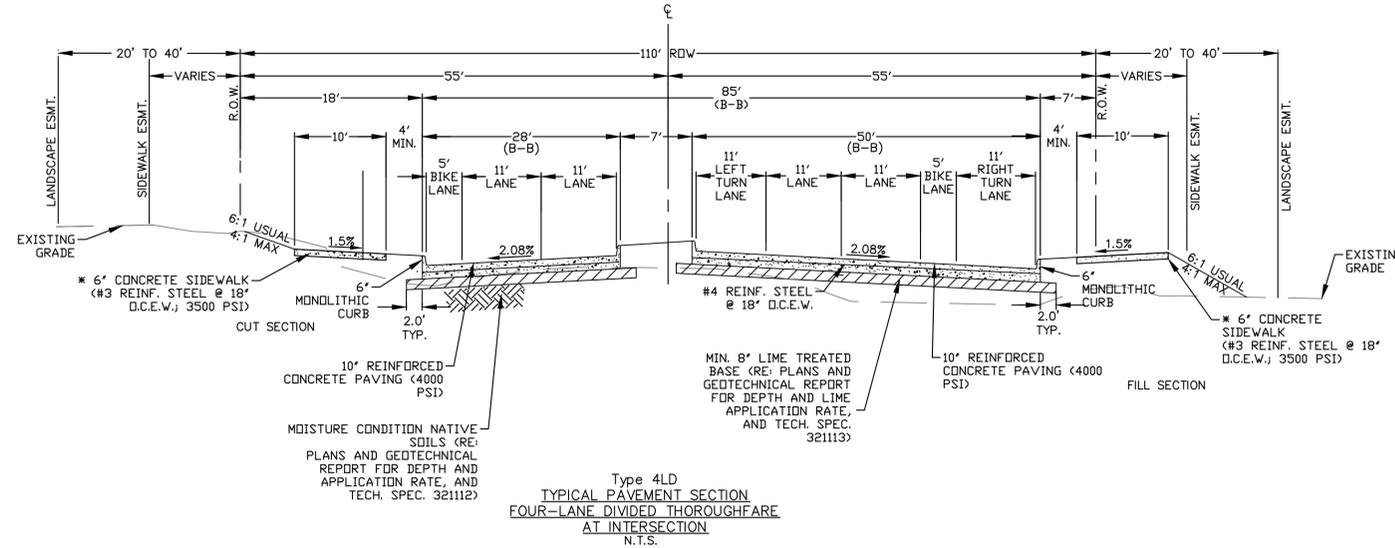


TYPICAL PAVEMENT SECTION  
COLLECTOR STREET  
(37'-0" B-B)  
N.T.S.

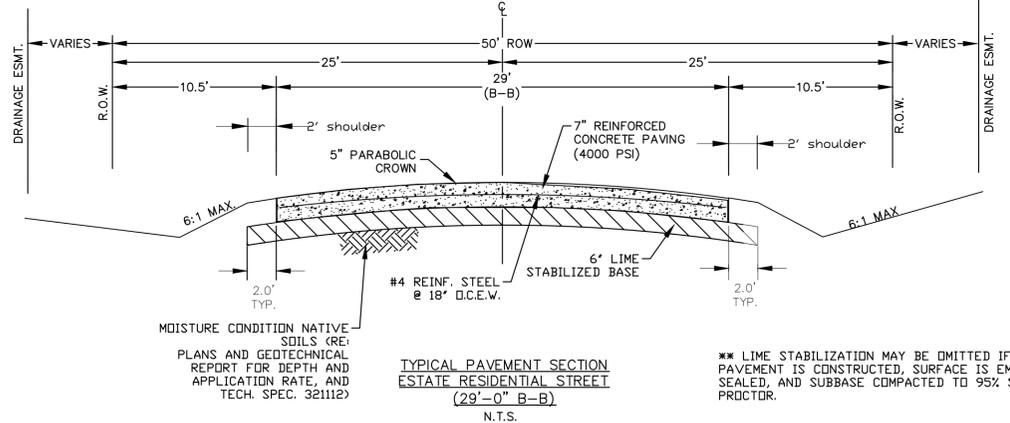
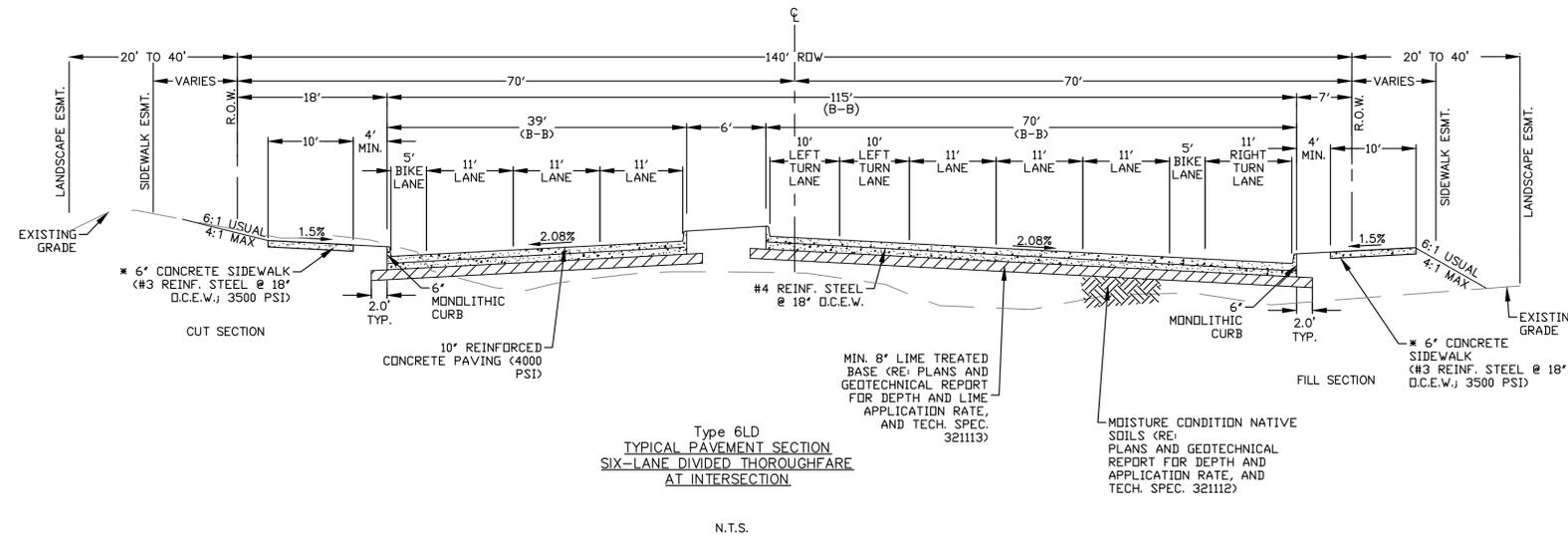


TYPICAL PAVEMENT SECTION  
DIVIDED RESIDENTIAL SUBDIVISION ENTRANCE  
N.T.S.

<b>CITY OF CELINA</b>			
<b>STREET DETAILS 1</b>			
<b>STANDARD DETAILS</b>			
			
DESIGNED BY: TRC	REV. BY:	DATE:	SYMBOL:
CHECKED BY: G.J.	SCALE: NOT TO SCALE	DATE: SEPTEMBER, 2019	
			SHEET NO.: ST-1



- NOTES:
1. CONSTRUCT TRANSVERSE SAW JOINT @ 20 FEET (MAX)
  2. EXPANSION JOINTS TO BE PLACED AT ALL INTERSECTIONS AND RADIUS POINTS AND NOT TO EXCEED 240' BETWEEN JOINTS
  3. COMMERCIAL ALLEYS SHALL BE A MINIMUM OF 8' THICK.
  4. ADDITIONAL INCH OF PAVEMENT WILL BE REQUIRED IF LIME STABILIZATION IS OMITTED.



- NOTES:
1. ESTATE RESIDENTIAL STREET SHALL BE APPROVED TO BE USED FOR SUBDIVISIONS WITH LOT SIZES ONE (1) ACRE OR GREATER
  2. OFFSITE DRAINAGE EASEMENT SHALL BE PROVIDED IF NECESSARY.

**PAVEMENT NOTES:**

1. 4000 PSI REINFORCED CONCRETE PAVEMENT (5.5 SACK/CY), NO. 4 BARS @ 18" O.C.E.W., WITH 6" MONOLITHIC CURB.
2. BAR LAPS SHALL BE 30 BAR DIAMETERS.
3. BAR CHAIRS SHALL BE PROVIDED BY CONTRACTOR.
4. DO NOT PLACE CONCRETE JOINT WITHIN 2 FEET OF GUTTER LINE AT STREET CONNECTION.
5. LIME SHALL BE APPLIED BY PERCENTAGE DRY UNIT WEIGHT OF SOIL TREATED TO A MINIMUM IN PLACE COMPACTED THICKNESS OF SIX (6) INCHES FOR RESIDENTIAL AND COLLECTOR STREETS AND EIGHT (8) INCHES FOR THOROUGHFARES. FOR 6" THICK SECTION, MINIMUM LIME APPLICATION IS 37 LBS/SQ FT; FOR 8" THICK SECTION, MINIMUM LIME APPLICATION IS 54 LBS/SQ FT.

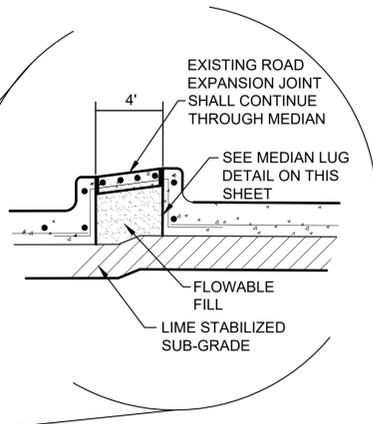
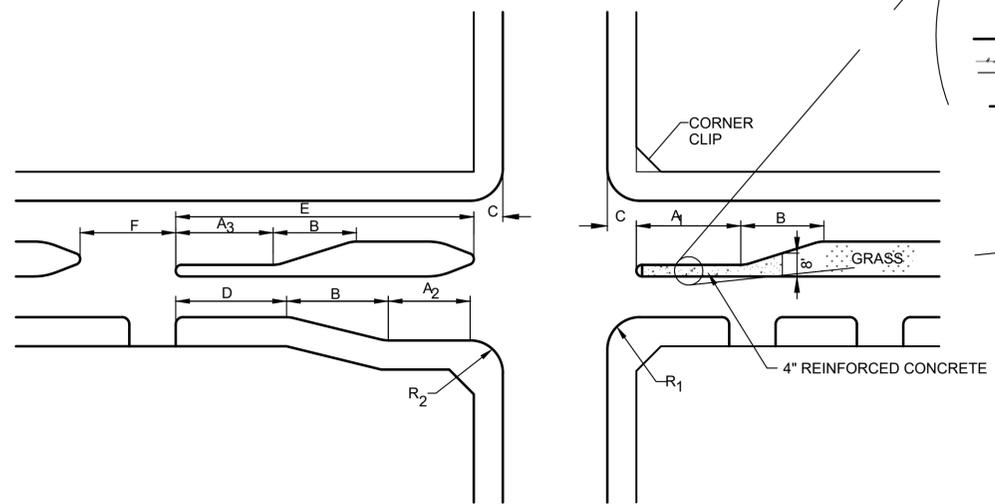
**PAVEMENT NOTES (CONTINUE):**

6. FORMING OF PAVEMENT:
  - A. SLIP-FORM: SLIP-FORM PAVEMENT METHOD SHALL BE USED FOR ALL PUBLIC STREETS AND ALLEYS UNLESS OTHERWISE APPROVED BY THE TOWN ENGINEER.
  - B. HAND FORM: HAND FORMED PAVEMENT METHOD MAY BE USED FOR TURN LANE, DECELERATION LANE, DRIVEWAY APPROACH, OR REPLACING A PANEL OF PUBLIC STREET OR ALLEY. HAND POURED PAVEMENTS SHALL BE 4500PSI REINFORCED CONCRETE.

<b>CITY OF CELINA</b>			
<b>STREET DETAILS 2</b>			
<b>STANDARD DETAILS</b>			
			
DESIGNED BY: TRC	REV. BY: [ ]	DATE: [ ]	SYMBOL: [ ]
CHECKED BY: K.B.	SCALE: NOT TO SCALE	DATE: SEPTEMBER, 2019	
			SHEET NO.: ST-2



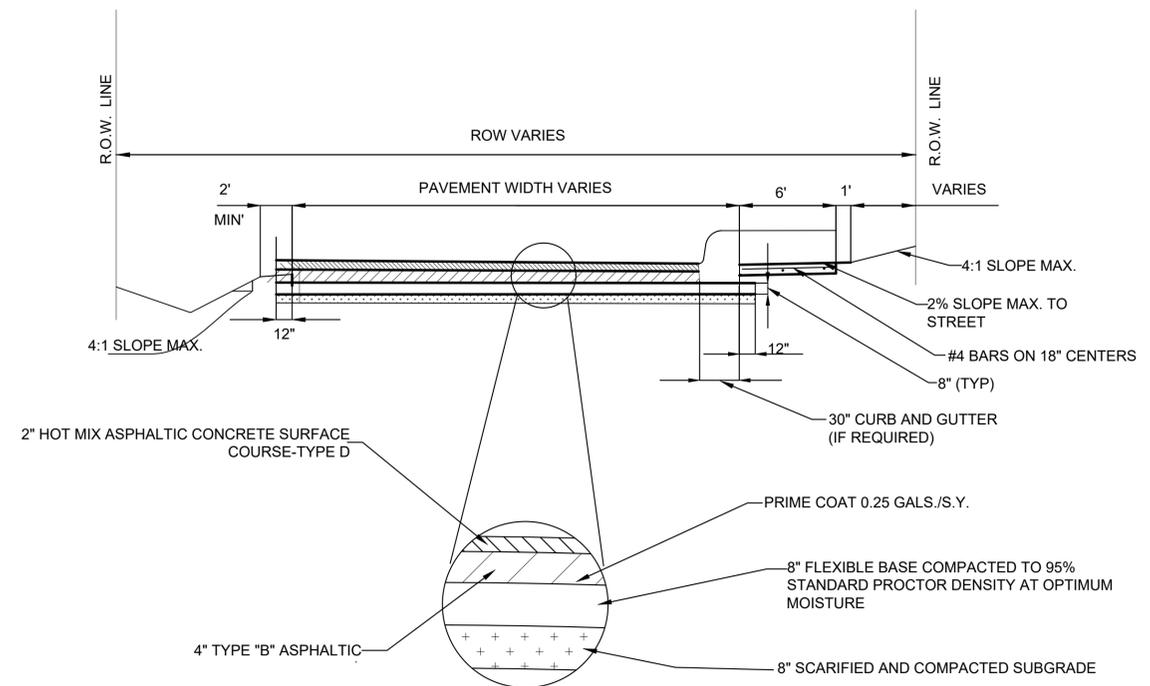
	A1*	A1+	A1#	A2*	A3	B	C	D	E	F	R1	R2	CORNER CLIP
6LD	275'	150'	100'	150'	150'	150'	20'	330'	600'	60'	50'	50'	25' X 25'
4LD	200'	150'	100'	150'	150'	150'	20'	330'	600'	60'	50'	50'	25' X 25'
2LC OR 2L	100'	150'	100'	100'	150'	150'	N/A	270'	N/A	N/A	40'	40'	15' X 15'
2LCB	100'	150'	100'	100'	150'	150'	N/A	270'	N/A	N/A	40'	40'	15' X 15'
2LN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25'	25'	10' X 10'
2LRN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25'	25'	10' X 10'



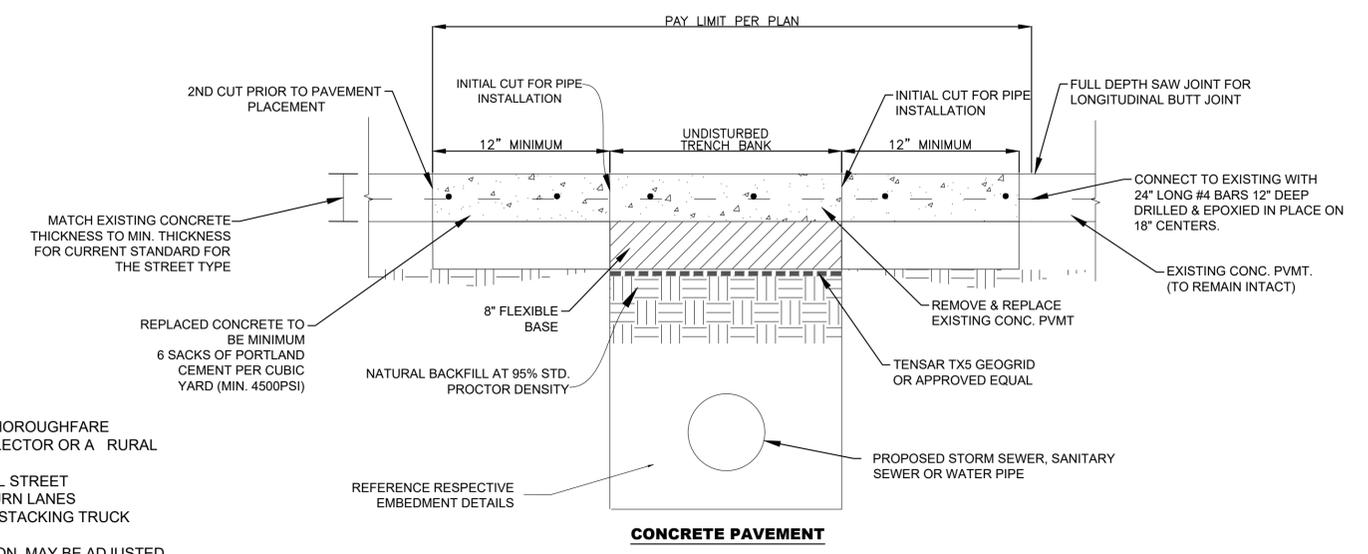
- NOTES**
- \* WHEN AN INTERSECTING STREET IS A MAJOR THOROUGHFARE  
+ WHEN AN INTERSECTING STREET IS A COLLECTOR OR A RURAL ROAD  
# WHEN AN INTERSECTING STREET IS LOCAL STREET  
\*\* MAY NOT BE APPLICABLE TO DUAL LEFT TURN LANES
  - A1, A2 OR A3 MAY BE INCREASED TO ALLOW FOR STACKING TRUCK TRAFFIC
  - CORNER CLIP BASED ON 90 DEGREE INTERSECTION, MAY BE ADJUSTED FOR ANGLED INTERSECTION
  - RADIUS AND CORNER CLIP ARE BASED ON THE HIGHEST CLASSIFICATION STREET AT AN INTERSECTION

**INTERSECTION DESIGN STANDARDS**

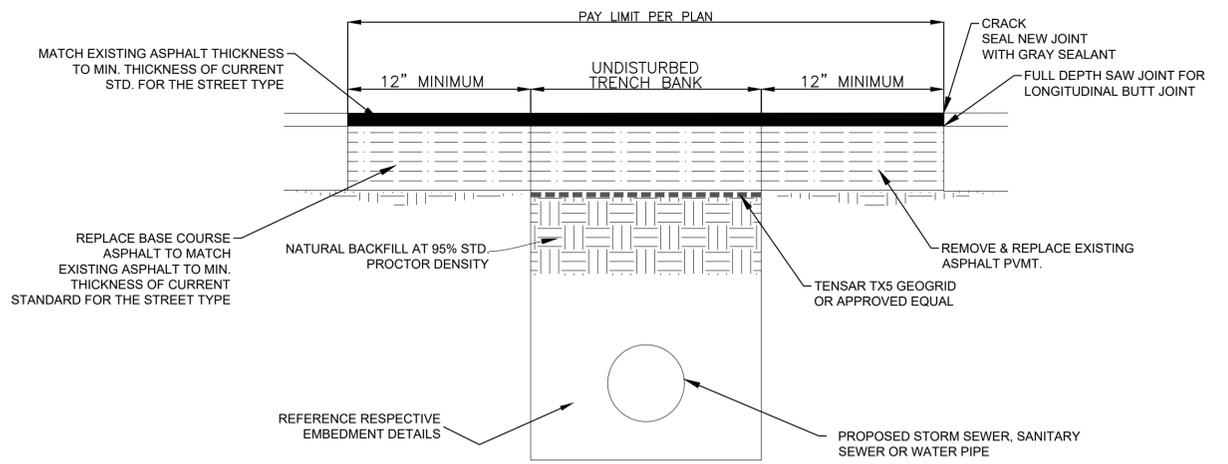
NOTE: CONTRACTOR SHALL PROVIDE PROPER DRAINAGE FOR ALL ASPHALT DETOURS AND TRANSITIONS AND SHALL MAINTAIN THEM UNTIL REMOVAL.



**ASPHALT PAVEMENT CROSS SECTION**  
(FOR EXISTING ASPHALT ROADWAY EXTENSION TEMPORARY DETOURS AND TRANSITIONS)



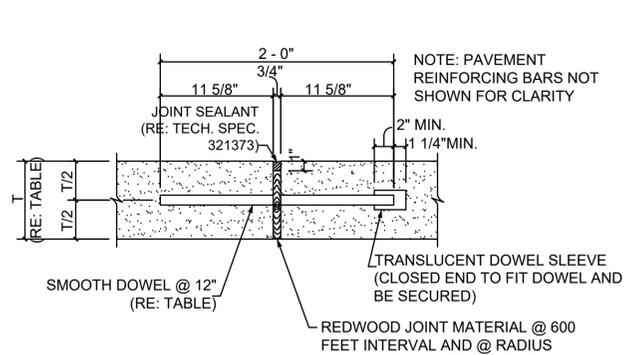
**CONCRETE PAVEMENT**



**FULL DEPTH ASPHALT PAVEMENT**

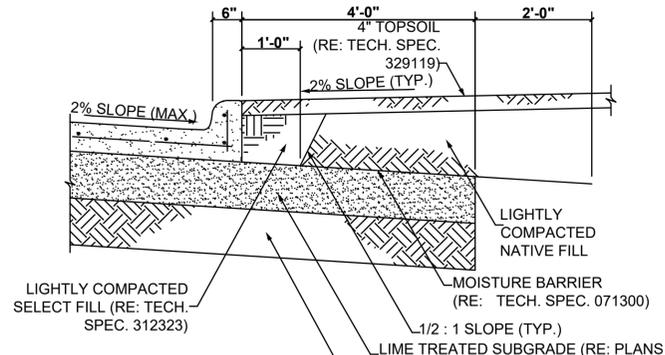
**PAVEMENT CUT AND REPAIR**  
N.T.S.

<b>CITY OF CELINA</b>			
<b>STREET DETAILS 4</b>			
<b>STANDARD DETAILS</b>			
DESIGNED BY: C.O	REV. BY	DATE	SYMBOL
CHECKED BY: K.B	SCALE: NOT TO SCALE	DATE: SEPTEMBER, 2019	SHEET NO.: ST-4



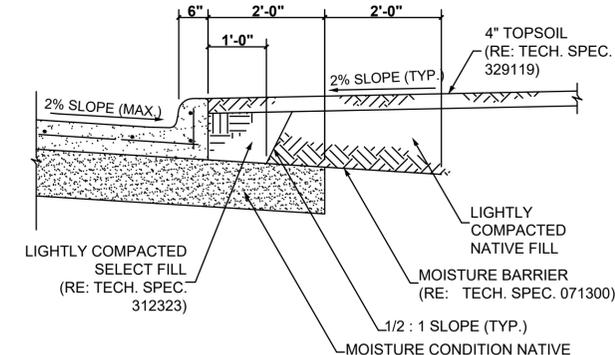
STREET CLASS	T(IN)	DOWEL SIZE (IN)	DOWEL LENGTH (L) (IN)
TYPE 6LD	9	1.0	24
TYPE 4LD	8	1.0	24
TYPE 2LCB	7	0.75	24
TYPE 2LC	6	0.75	24
TYPE 2L	6	0.75	24
TYPE 2LN	6	0.75	24
TYPE 2LRN	6	0.75	24

**CONCRETE PAVEMENT EXPANSION JOINT**



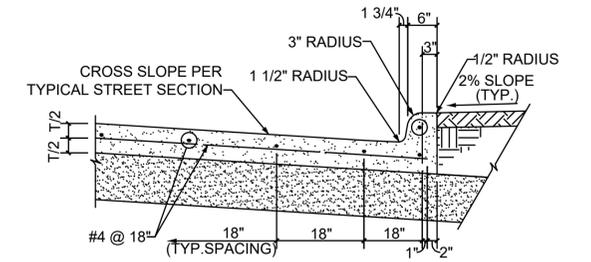
	ROW WIDTH	PAVEMENT WIDTH FACE TO FACE
TYPE 6LD	120'	DIVIDED-36' EACH WAY
TYPE 4LD	90'	DIVIDED-24' EACH WAY
TYPE 2LCB	60'	41'
TYPE 2LC	60'	36'
TYPE 2L	60'	36'
TYPE 2LN	50'	30'
TYPE 2LRN	50'	26'

**THOROUGHFARE CLASSES "6LD" THROUGH "2LRN" TYPICAL SECTION (WITH MOISTURE CONDITIONING)**

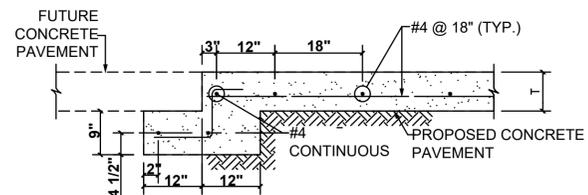


	ROW WIDTH	PAVEMENT WIDTH FACE TO FACE
TYPE 6LD	120'	DIVIDED-36' EACH WAY
TYPE 4LD	90'	DIVIDED-24' EACH WAY
TYPE 2LCB	60'	41'
TYPE 2LC	60'	36'
TYPE 2L	60'	36'
TYPE 2LN	50'	30'
TYPE 2LRN	50'	26'

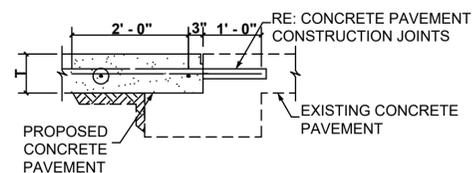
**THOROUGHFARE CLASSES "2LC" THROUGH "2LRN" TYPICAL SECTION (WITHOUT MOISTURE CONDITIONING)**



**TYPICAL PAVEMENT REINFORCEMENT AND CONCRETE CURB**

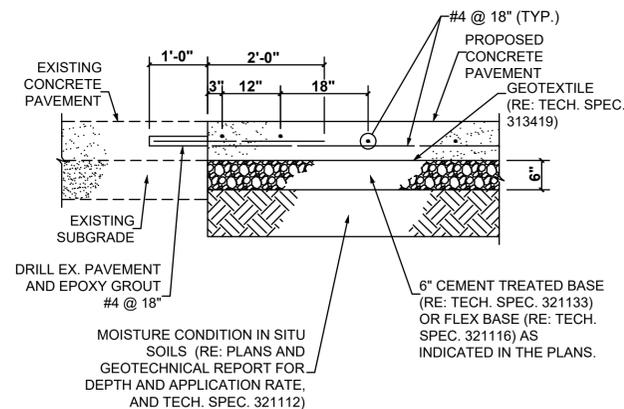


STREET HEADER FOR FUTURE CONCRETE PAVEMENT

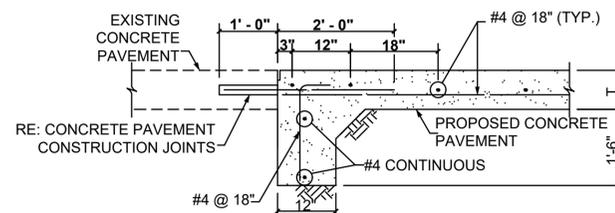


CONCRETE PAVEMENT AT STREET HEADER

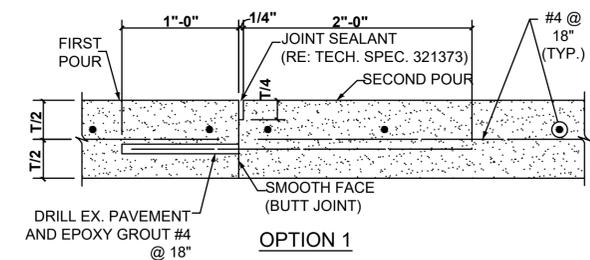
**CONCRETE STREET HEADERS**



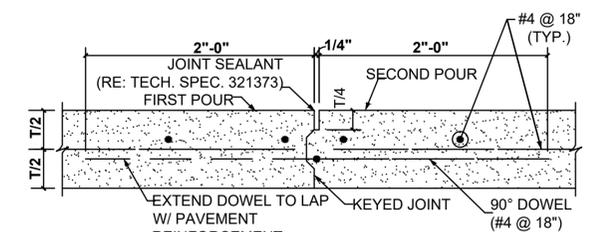
**EXISTING CONCRETE PAVEMENT WIDENING**



**STREET HEADER AT EXISTING PAVEMENT**



OPTION 1



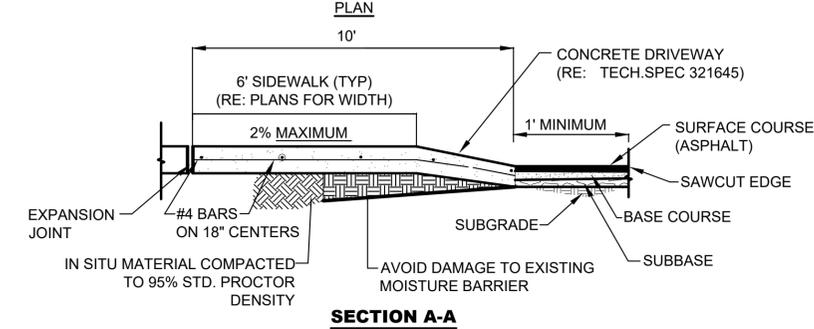
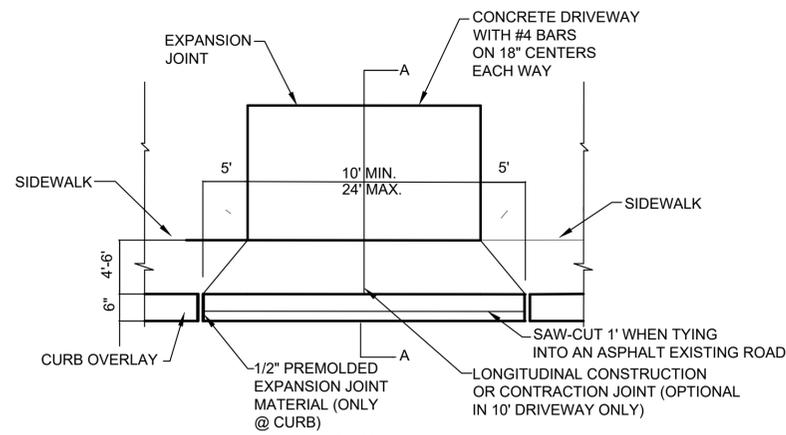
OPTION 2

**CONCRETE PAVEMENT CONSTRUCTION JOINTS**

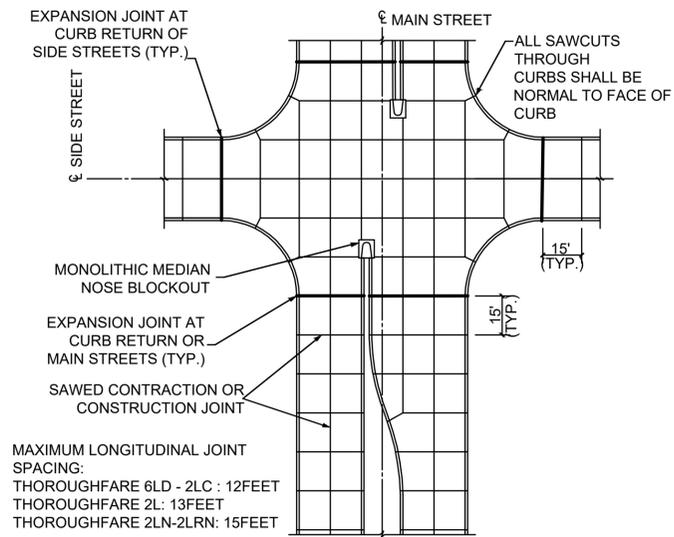
**CITY OF CELINA  
STREET DETAILS 5  
STANDARD DETAILS**



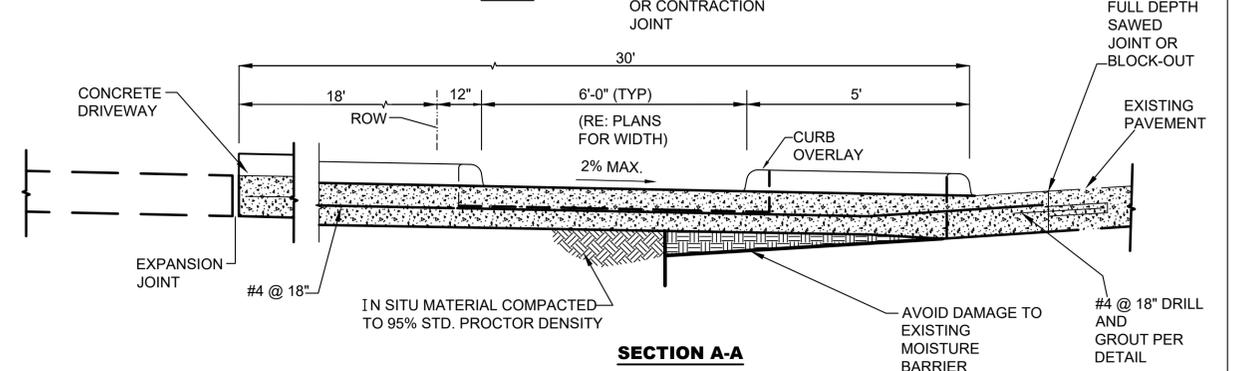
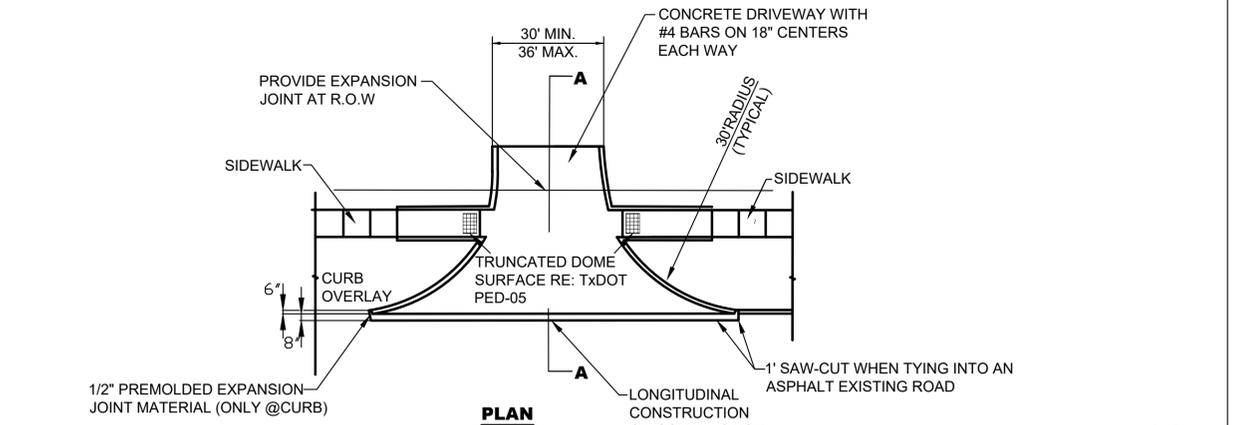
DESIGNED BY: C.O.	REV. BY:	DATE:	SYMBOL:	DATE: MARCH, 2018
CHECKED BY: G.J.	SCALE: NOT TO SCALE	SHEET NO.: ST- 5		



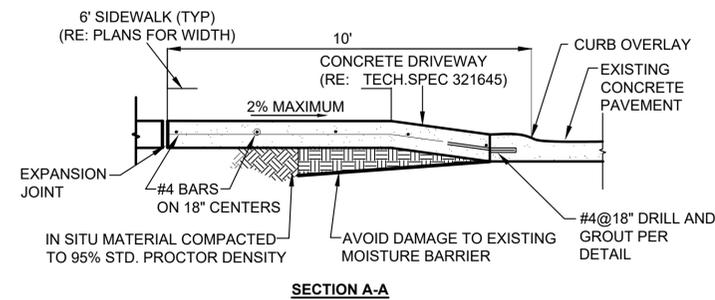
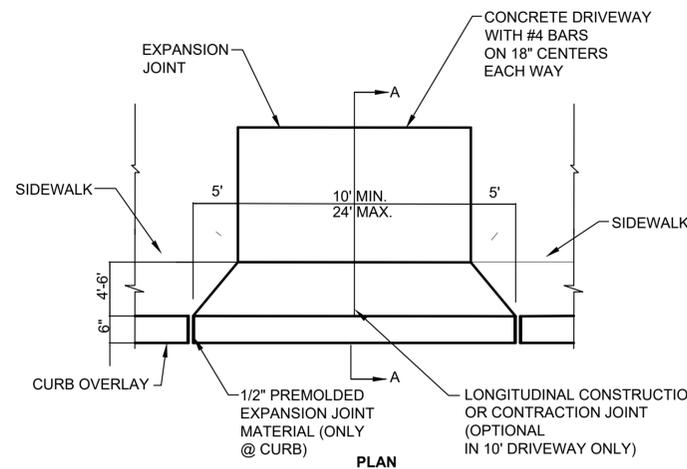
**RESIDENTIAL DRIVEWAY APPROACH JOINING EXISTING ASPHALT PAVEMENT**



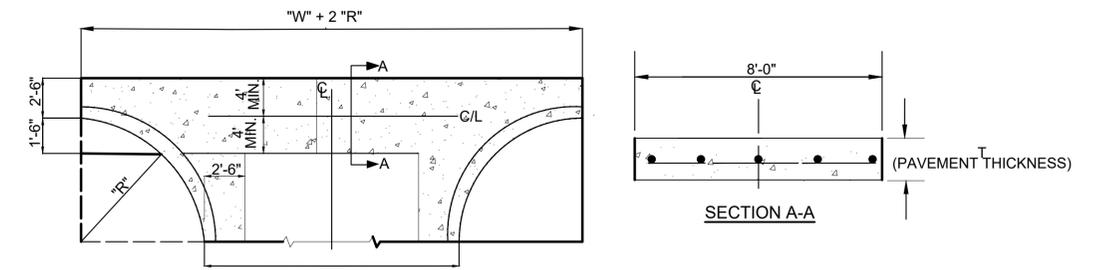
**CONCRETE PAVEMENT JOINTING LAYOUT**



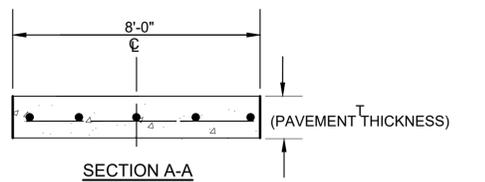
**COMMERCIAL DRIVEWAY APPROACH (RADIUS RETURN TYPE)**



**RESIDENTIAL DRIVEWAY APPROACH JOINING EXISTING CONCRETE PAVEMENT**



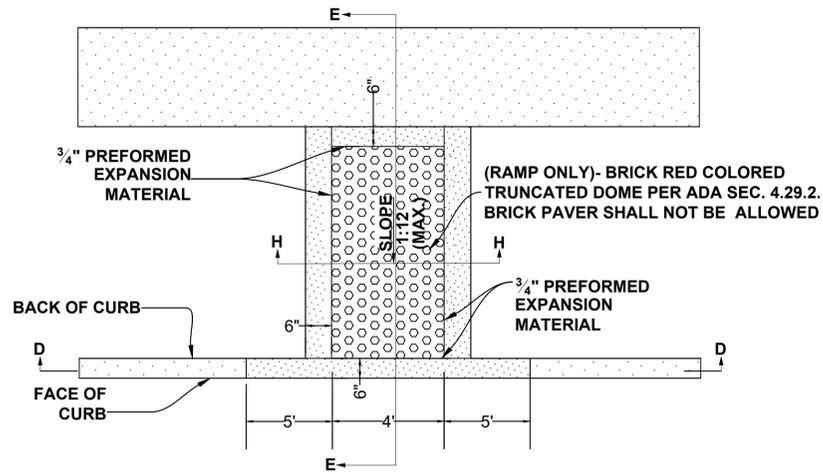
**VALLEY GUTTER PLAN**



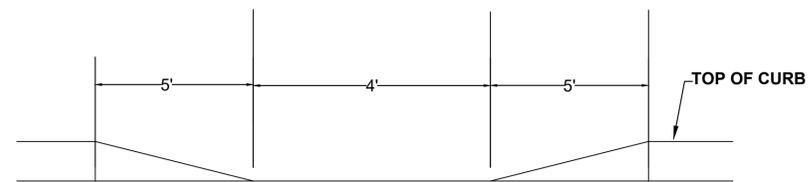
**CITY OF CELINA  
STREET DETAILS 6  
STANDARD DETAILS**



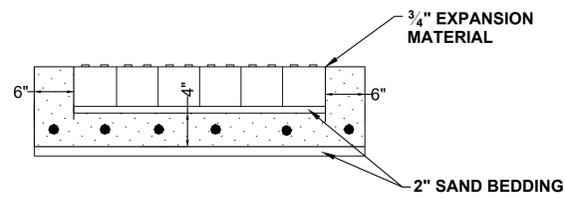
DESIGNED BY: C.O	REV. BY:	DATE:	SYMBOL:	DATE: SEPTEMBER, 2019
CHECKED BY: G.J	SCALE: NOT TO SCALE			SHEET NO.: ST-6



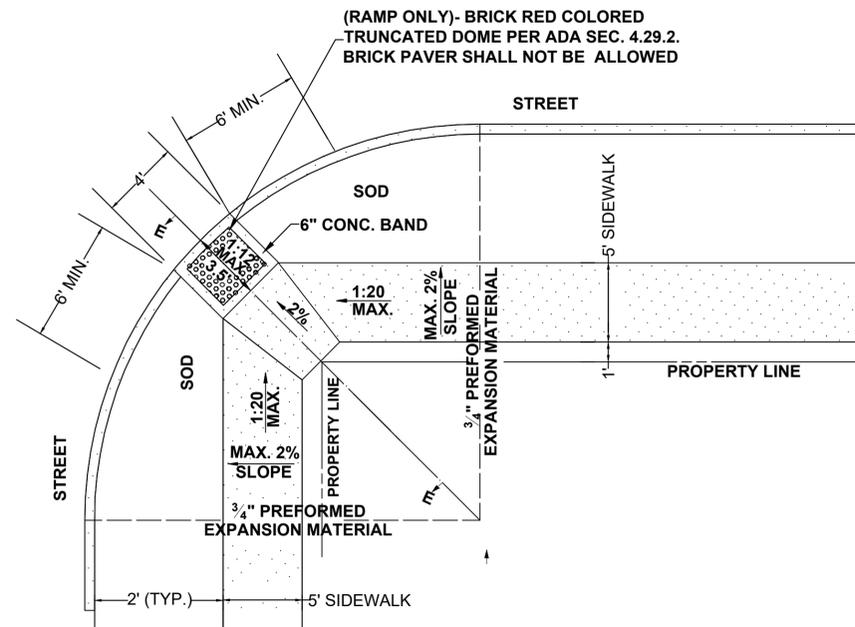
**BARRIER FREE RAMP AT STRAIGHT CURB**



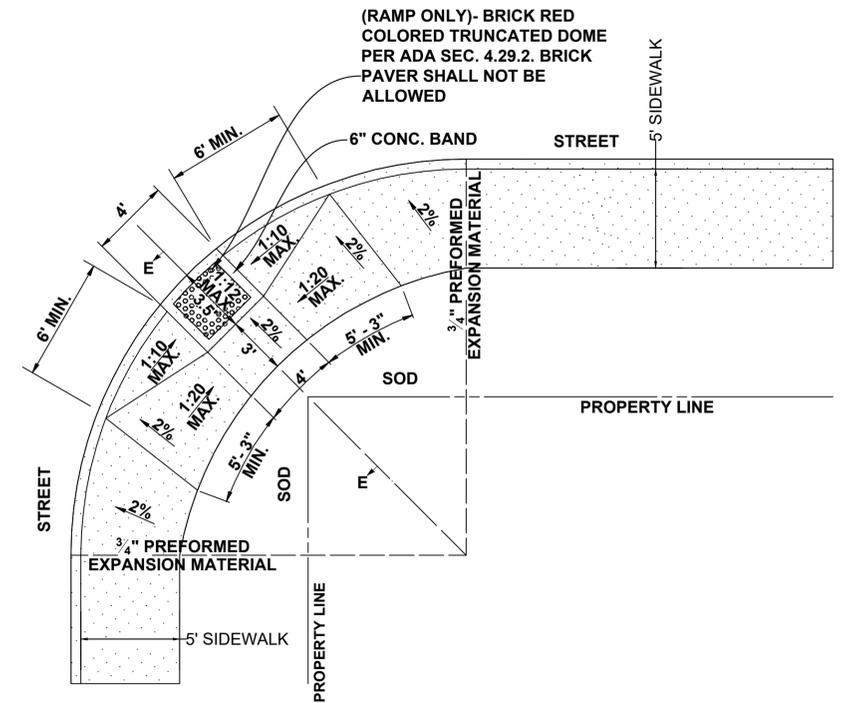
SECTION D - D



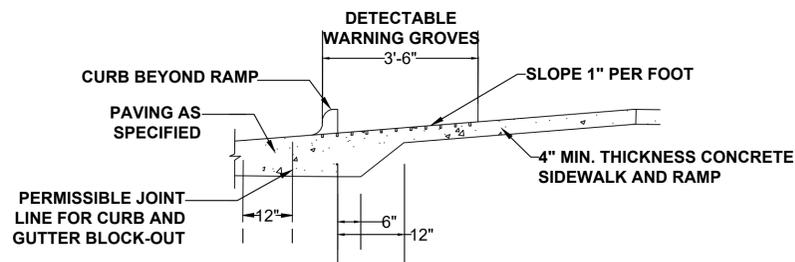
SECTION H - H



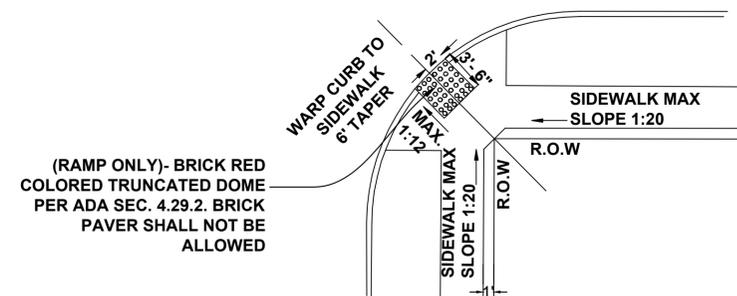
**RAMP FOR SIDEWALK AWAY FROM CURB**



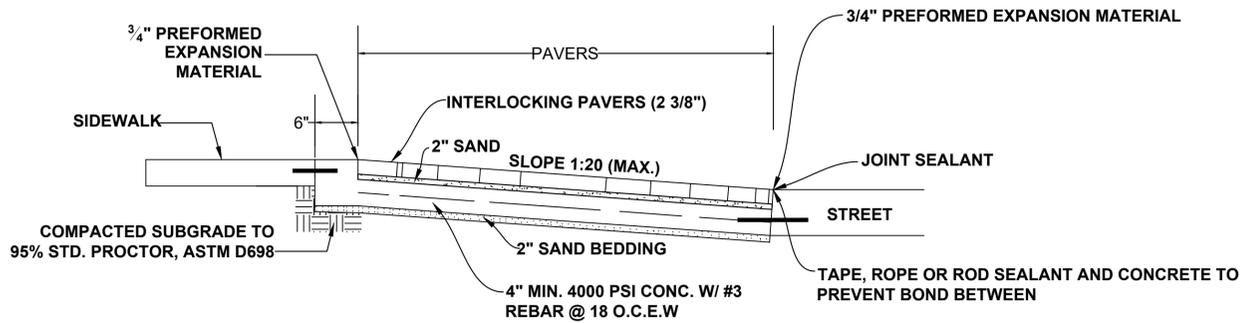
**RAMP FOR SIDEWALK NEXT TO CURB**



**BARRIER FREE RAMP TYPICAL SECTION THRU RESIDENTIAL RAMP**



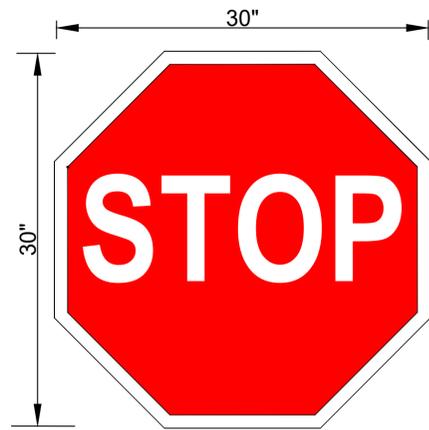
**BARRIER FREE RAMP STREET INTERSECTION PLAN VIEW**



SECTION E - E (BARRIER FREE)

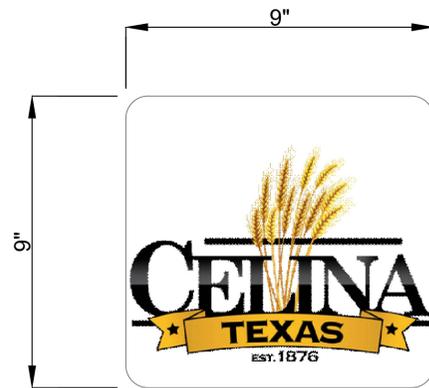
NB. DESIGN SHOWN ARE FOR 6" CURBS. FOR CURBS WITH HEIGHT GREATER THAT 6", DIMENSIONS SHALL BE INCREASED PROPORTIONATELY

<b>CITY OF CELINA</b>			
<b>STREET DETAILS 7</b>			
<b>STANDARD DETAILS</b>			
			
DESIGNED BY: C.O	REV. BY:	DATE:	SYMBOL:
CHECKED BY: G-J	SCALE: NOT TO SCALE	DATE: SEPTEMBER, 2019	SHEET NO.: ST-7



HI R1-1/30 BK  
BLACK POWDER-COATED BACK

**STOP SIGNS**

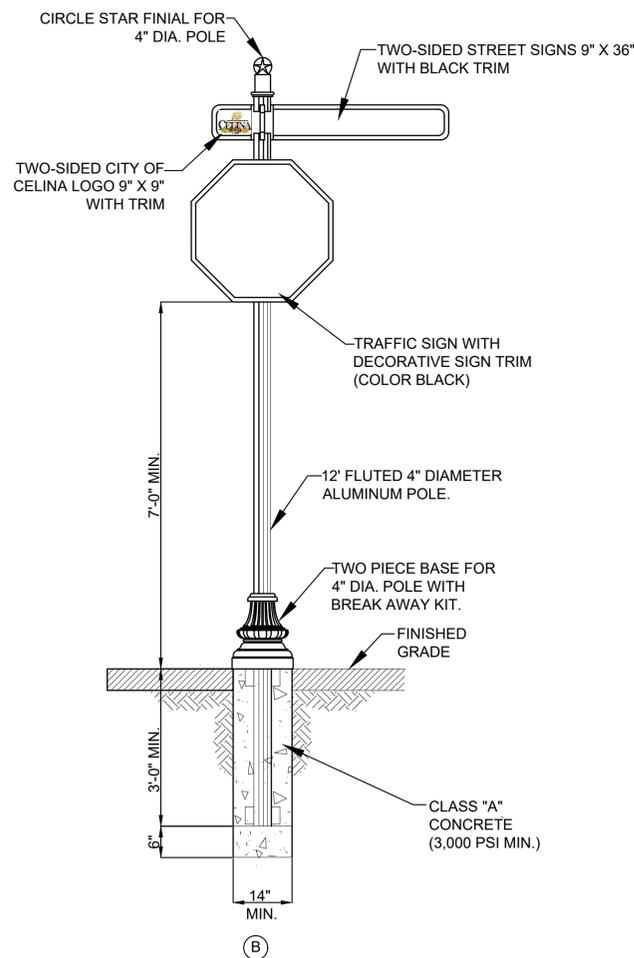


**CURRENT CITY LOGO**

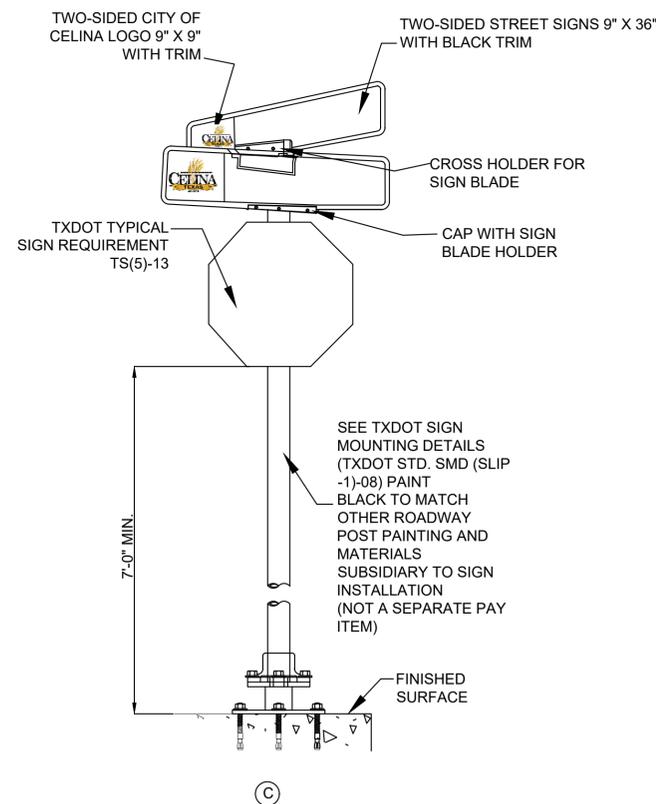


**STREET NAME SIGN**

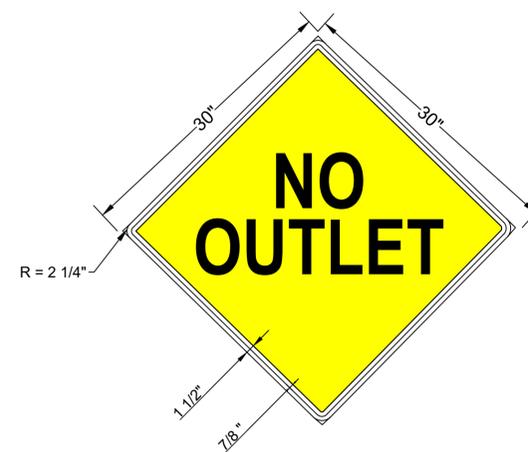
1. LOCATION
  - NINE INCH (9") EXTRUDED BLADES SHALL BE USED AT ALL INTERSECTIONS.
2. BLADE REQUIREMENTS
  - NINE INCH (9") EXTRUDED BLADE SHALL BE ALUMINUM.
3. LETTERING ALIGNMENT
  - STREET NAME SHALL BE LEFT JUSTIFIED.
  - BLOCK NUMBERS SHALL BE LOCATED IN LOWER RIGHT AND LEFT HAND CORNERS.
  - ABBREVIATED STREET DESIGNATIONS SHALL BE LOCATED IN THE UPPER RIGHT HAND CORNER.
4. LETTERING FOR NINE INCH (9") EXTRUDED BLADES
  - LETTERS SHALL BE UPPER & LOWERCASE.
  - FONT SHALL BE FEDERAL HIGHWAY SERIES "B" OR SERIES "C". (MANUFACTURER WILL DETERMINE BEST SERIES TO USE BASED UPON LENGTH OF BLADE AND LENGTH OF NAME)
  - LETTERS AND NUMBERS IN STREET NAME SHALL BE SIX INCHES (6") TALL.
  - LETTERS IN ABBREVIATED STREET DESIGNATIONS AND BLOCK NUMBERS SHALL BE THREE INCHES (3") TALL. (I.E, LN, PKWY, DR, CT, ETC.)
5. SIGN SHEETING AND COLORS
  - SHEETING SHALL BE HIGH INTENSITY.
  - BACKGROUND COLOR SHALL BE GREEN.
  - LEGEND SHALL BE WHITE.
  - CITY OF CELINA LOGO SHALL BE LEFT JUSTIFIED.
6. NO OUTLET STREETS
  - FOR A STREET WITH ONLY ONE CUL-DE-SAC END (TYPICAL) A STANDARD W 14-2a "NO OUTLET" SHALL BE MOUNTED AT THE END OF STREET NAME BLADE.
  - PARKING LOT TRIP SHALL BE WHITE.
  - IN THE CASE OF A STREET WITH TWO CUL-DE-SAC ENDS, TWO (2) STANDARD W 14-2a "NO OUTLET" SIGNS SHALL BE MOUNTED AT THE ENDS OF THE STREET NAME BLADE WITH ARROWS PLACED IN THE APPROPRIATE DIRECTIONS.
7. BLOCK NUMBER
  - DEVELOPERS AND CONTRACTORS ORDERING SIGNS SHOULD CONTACT GIS MANAGER AT (972) 382-2682, EXT. 1023.
  - BLOCK NUMBERS ARE REQUIRED ON ALL STREET NAME BLADES, EVEN IF NO HOUSES OR BUILDINGS FRONT ONTO THE STREET
8. MANUFACTURER CONTACT
  - BRANDON INDUSTRIES, INC. 1601 W. WILMETH ROAD, MCKINNEY, TEXAS 75069. (972) 542-3000, OR APPROVED EQUAL.



**TRAFFIC SIGN AND ROADWAY POST WITH BASE**



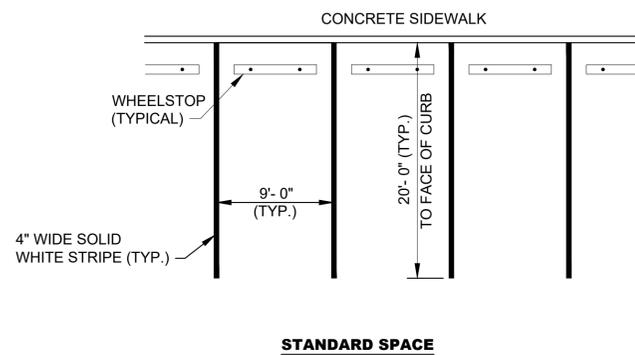
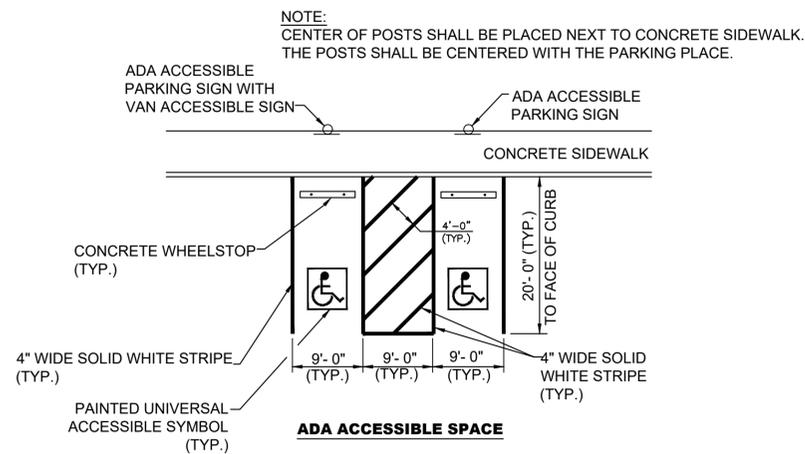
**TRAFFIC SIGN (TXDOT RIGHT-OF-WAY)**



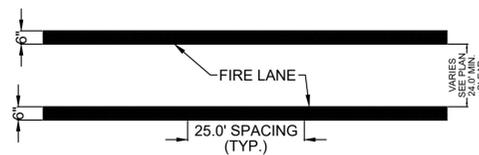
SIGN DESIGNATION: W14-2  
SINGLE LANE SIGN DIMENSIONS: 30" x 30"  
MULTI-LANE SIGN DIMENSIONS: 36" x 36"

**NO OUTLET SIGN  
N.T.S.**

<b>CITY OF CELINA</b>				
<b>STREET DETAILS 8</b>				
<b>STANDARD DETAILS</b>				
				
DESIGNED BY: C.O	REV. BY:	DATE:	SYMBOL:	DATE: SEPTEMBER, 2019
CHECKED BY: G.J	SCALE: NOT TO SCALE	SHEET NO.: ST- 8		



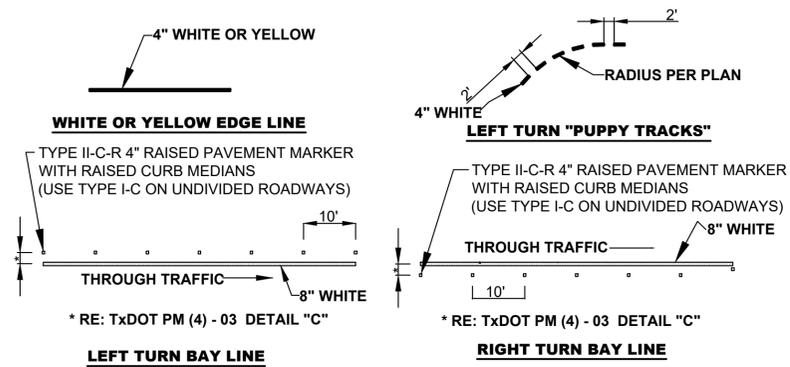
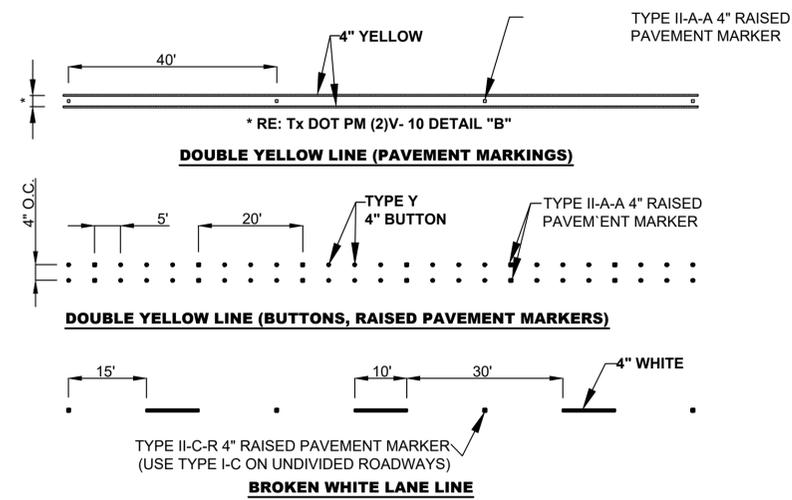
## PARKING SPACE STRIPING



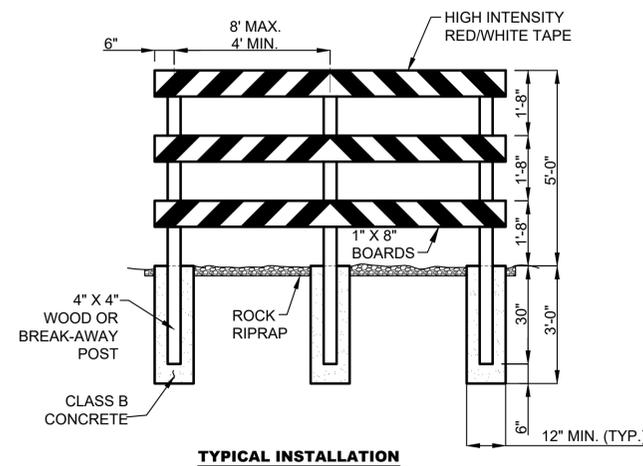
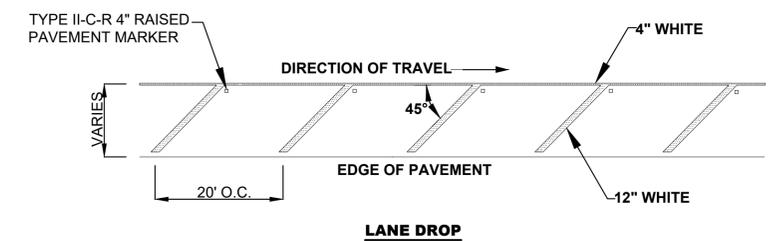
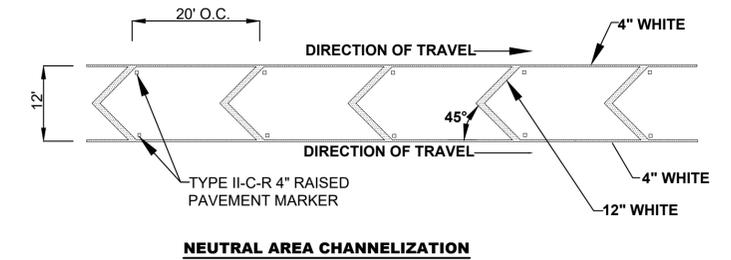
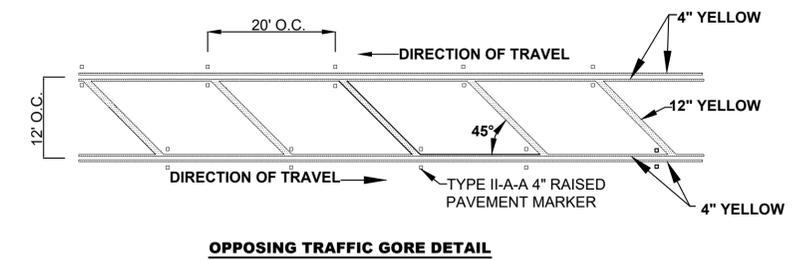
### NOTES:

- PAVEMENT MARKING SHALL BE FROM THE TOP OF THE SEAM OF THE CURB TO A POINT EVEN WITH THE DRIVING SURFACE.
- THE STRIPE MAY BE BRUSHED OR SPRAYED, ONE COAT FINISH.
- LETTERING SHALL BE STENCIL FORMED, BRUSH APPLIED AND SPACED AS DETAILED.
- PAINT:
  - STRIPING SHALL BE SIX INCHES (6") WIDE PAINTED WITH AN EXTERIOR ACRYLIC LATEX PAINT. COLOR SHALL BE "TRAFFIC RED" GLIDDEN NO. 63251 OR APPROVED EQUAL.
  - LETTERING SHALL BE FOUR INCHES (4") HIGH PAINTED WITH AN EXTERIOR ACRYLIC LATEX PAINT. LETTERS SHALL BE ONE INCH (1") STROKE. COLOR SHALL BE "TRAFFIC WHITE" GLIDDEN NO. 563245 OR APPROVED EQUAL.

## FIRE LANE STRIPING DETAIL



## PAVEMENT MARKINGS AND MARKERS

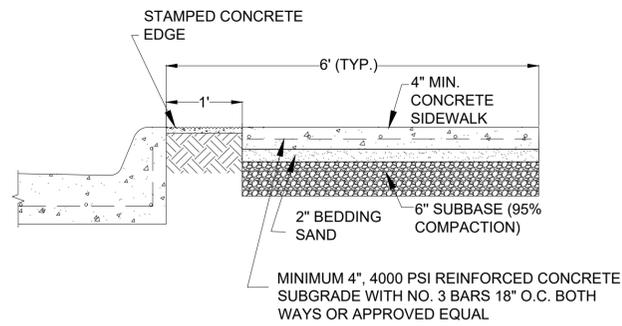


## DEAD END BARRICADE

### CITY OF CELINA STREET DETAILS 9 STANDARD DETAILS



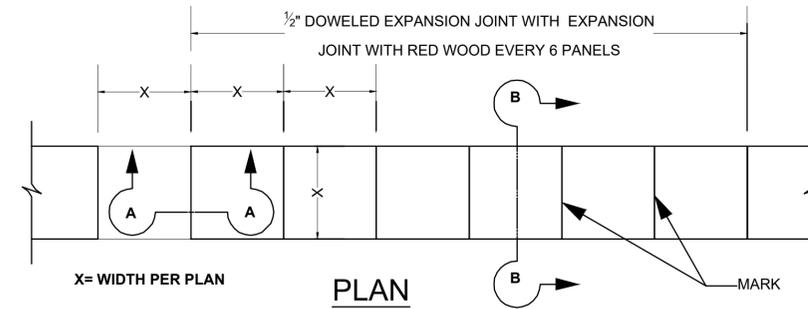
DESIGNED BY: C.O	REV. BY:	DATE:	SYMBOL:	DATE: SEPTEMBER, 2019
CHECKED BY: K.B	SCALE: NOT TO SCALE			SHEET NO.: ST-9



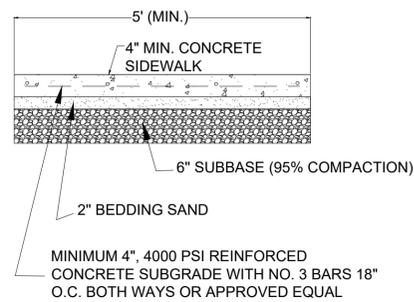
**SIDEWALK EDGE STAMPED CONCRETE DETAIL**

**SIDEWALK NOTES:**

1. PROVIDE 1/2" EXPANSION JOINT WHERE NEW SIDEWALK ABUTS EXISTING SIDEWALK AND AT EVERY 6 PANELS
2. PROVIDE 1/4" W x 1/2" D SAWCUT JOINTS AT 5' INTERVALS
3. BEDDING SAND SHALL CONFORM TO THE GRADING REQUIREMENTS OF ASTM C33 AS SHOWN IN TABLE 1.
4. SIDEWALK TO CONFORM TO ALL A.D.A. AND TEXAS ACCESSIBILITY STANDARDS (TAS)
5. MAXIMUM GRADE LESS THAN FIVE PERCENT (5%).
6. CROSS SLOPE MAXIMUM IS ONE AND ONE HALF PERCENT (1.5%)

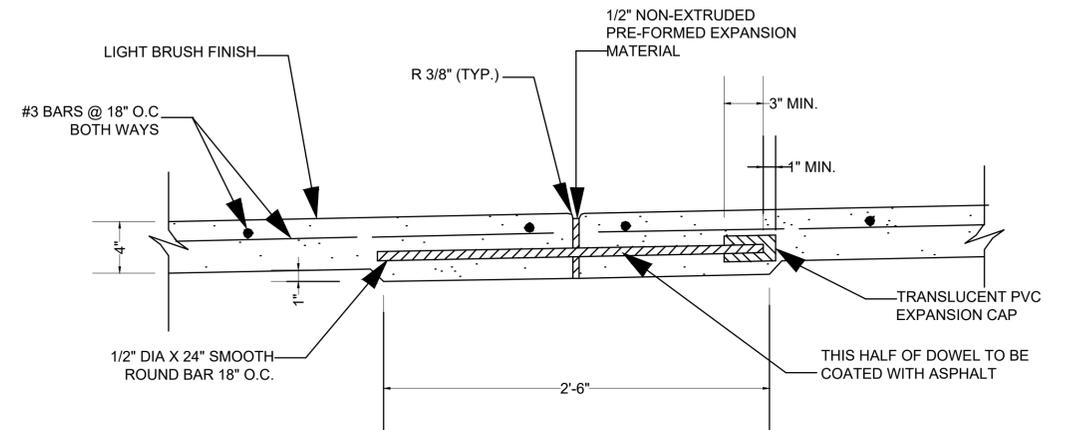


SIDEWALK	
UP TO 6'	4"
6'1" TO 7'11"	5"
8' OR GREATER	6"

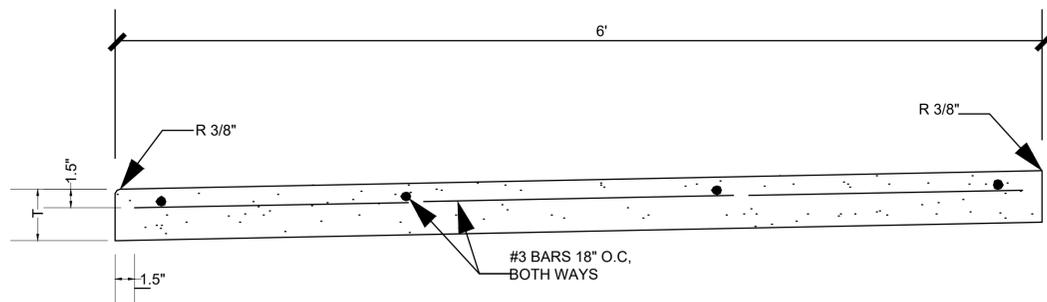


**SIDEWALK DETAIL**

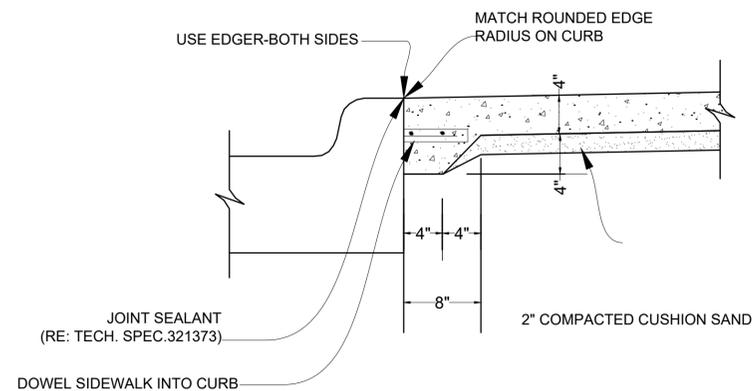
TABLE 1 GRADING REQUIREMENTS FOR BEDDING SAND ASTM C 33	
SIEVE SIZE	PERCENT PASSING
3/8 IN. (9.5mm)	100
NO. 4 (4.75mm)	95 TO 100
NO. 8 (2.36mm)	80 TO 100
NO. 16 (1.18mm)	50 TO 85
NO. 30 (600um)	25 TO 60
NO. 50 (300um)	10 TO 30
NO. 100 (150um)	0 TO 10
NO. 200 (75um)	.LT. 2%



**SECTION A-A**



**SECTION B-B**



**JOINT LUG DETAIL FOR SIDEWALK ADJACENT TO CURB**

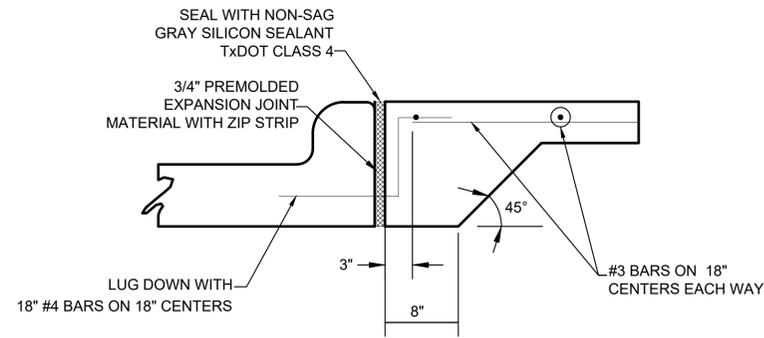
**CROSSWALK STAMPED CONCRETE NOTES:**  
 PATTERN: BOMANITE-HERRINGBONE BRICK  
 COLOR: THISTLE BROWN (4B) INTEGRAL COLOR  
 LIGHT BROWN (BC-2 CH-00135-60) COLOR HARDENER  
 LIGHT BROWN (BC-2 CH-00135-60) RELEASE AGENT

**BOARDER / ACCENT STRIP OF PATTERN SHALL BE**  
 PATTERN: BOMANITE-STACKED BOND BRICK  
 COLOR: RED CLAY (4D) INTEGRAL COLOR  
 FOREST BROWN (BC-1 CH-00093-60) COLOR HARDENER  
 FOREST BROWN (BC-1 CH-00093-60) RELEASE AGENT

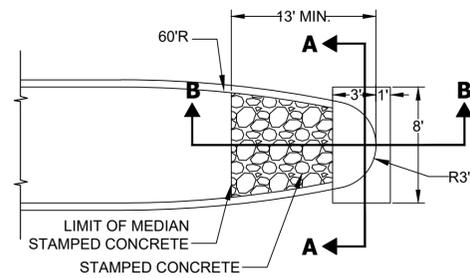
**WELCOME MAT & WELCOME MAT STAMPED CONCRETE**  
 PATTERN: BOMANITE-RUNNING BOND USED BRICK  
 COLOR: INTEGRAL COLOR TO MATCH CARAMEL (BC-1 CH-00093-60) COLOR HARDENER  
 CARAMEL (BC-1 CH-00093-60) COLOR HARDENER  
 CARAMEL (BC-1 CH-00093-60) RELEASE AGENT  
 PATTERN: BOMANITE-STACKED BOND BRICK  
 COLOR: INTEGRAL COLOR TO MATCH FOREST BROWN (BC-1 CH-00093-60) COLOR HARDENER  
 FOREST BROWN (BC-1 CH-00093-60) COLOR HARDENER  
 FOREST BROWN (BC-1 CH-00093-60) RELEASE AGENT

**REINFORCED CONCRETE SIDEWALK**

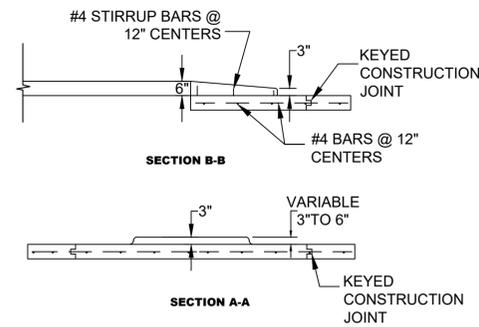
<b>CITY OF CELINA</b>			
<b>STREET DETAILS 10</b>			
<b>STANDARD DETAILS</b>			
			
DESIGNED BY: C.O.	REV. BY	DATE	DATE: SEPTEMBER, 2019
CHECKED BY: G.J.	SCALE: NOT TO SCALE	SHEET NO.: ST- 10	



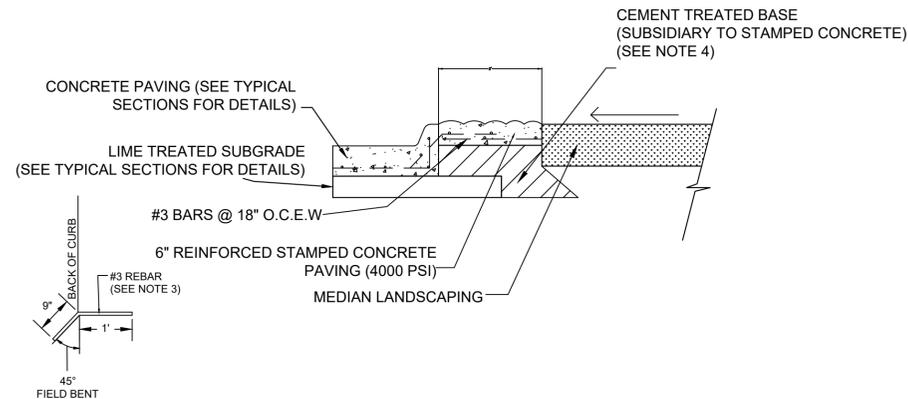
**MEDIAN LUG DETAIL**



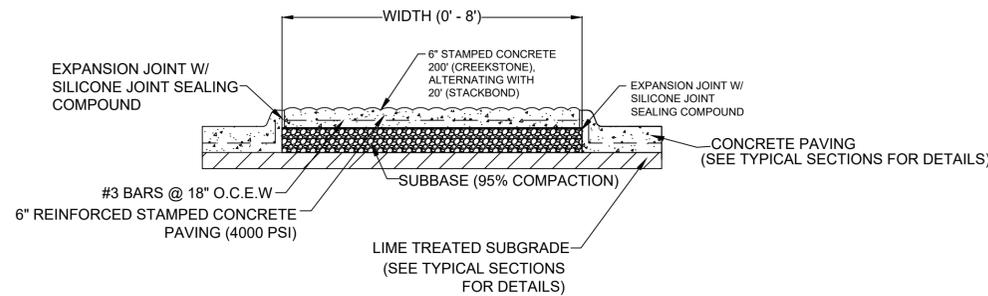
**LAYDOWN MEDIAN NOSE DETAIL**



- NOTES:**  
**ROADWAY MEDIAN STAMPED CONCRETE**  
 FIRST 50' OF PATTERN SHALL BE:  
 PATTERN: BOMANITE-BOMACON CREEK STONE  
 COLOR: LIGHT SAND COLOR HARDENER  
 LIGHT BROWN (BC-2 CH-00135-60) RELEASE AGENT  
 DARK WALNUT CHEMICAL STAIN (DILUTED TO ANTIQUE)  
 AUBURN CHEMICAL STAIN (DILUTED TO ANTIQUE)  
 PINE CHEMICAL STAIN (DILUTED TO ANTIQUE)  
 ALTERNATING WITH 20' OF PATTERN SHALL BE:  
 PATTERN: BOMANITE- STACKED BOND BRICK  
 COLOR: RED CLAY(4D) INTEGRAL COLOR  
 FOREST BROWN (BC-1 CH-00093-60) COLOR HARDENER  
 FOREST BROWN (BC-1 CH-00093-60) RELEASE AGENT

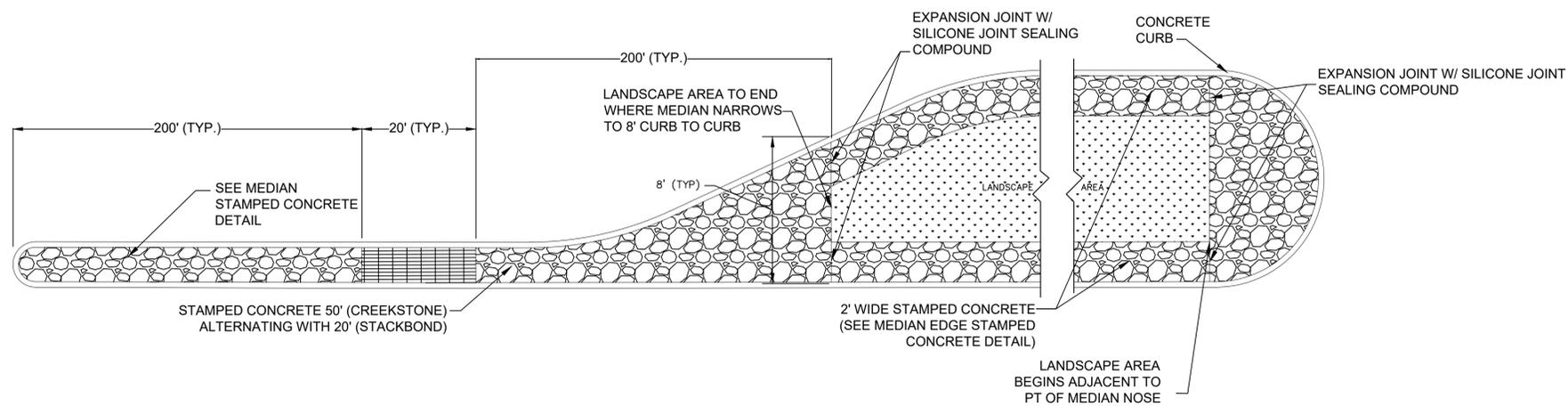


**MEDIAN EDGE STAMPED CONCRETE DETAIL**



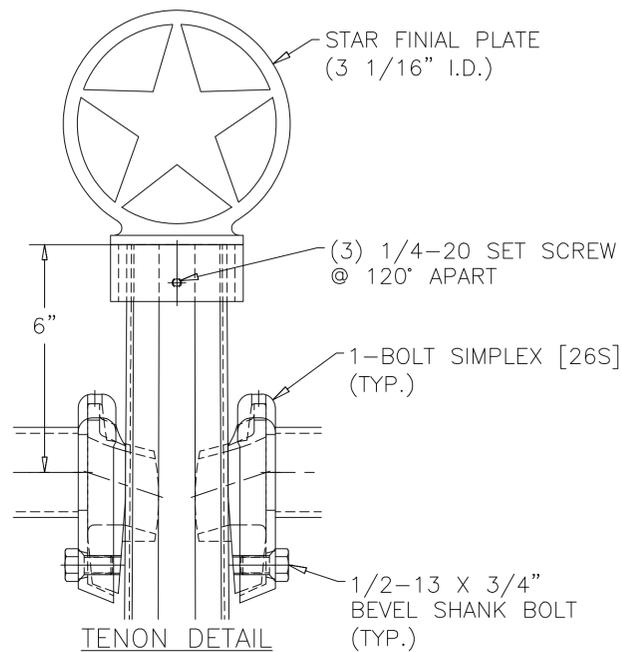
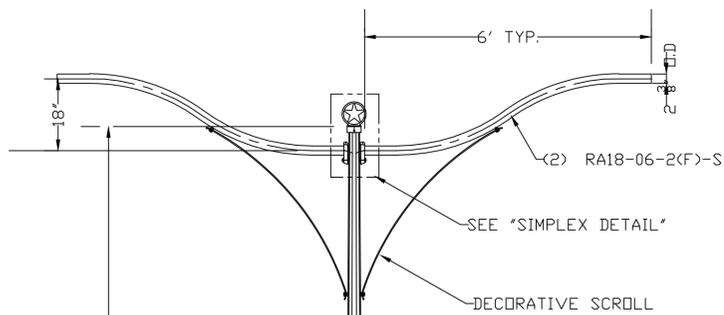
**MEDIAN STAMPED CONCRETE DETAIL**

- NOTES:**
- CONTRACTOR TO PROVIDE 6'X6' MOCK-UP OF EACH PATTERN AND COLOR PRIOR TO CONSTRUCTION, FOR CITY'S APPROVAL.
  - IF THE #3 REBAR IS TO BE PLACED AS A DOWEL BAR AFTER THE CURB IS CONSTRUCTED, THE DOWEL BAR MUST BE EPOXIED INTO A 1/2 INCH MAXIMUM DIAMETER DRILLED HOLE IN THE CURB EVERY TWO FEET. CROSS SLOPE IS TO BE DETERMINED IN THE FIELD, TO PROVIDE A ONE PERCENT MINIMUM SLOPE WITH SMOOTH TRANSITIONS TO CURB LINES. THE CROSS SLOPE IS TO BE SUBJECT TO THE ENGINEERS APPROVAL.
  - IN ADDITION TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, MEDIAN, AND CROSSWALK PAVEMENT SPECIFICATIONS SHALL BE IN ACCORDANCE WITH "BOMANITE CORPORATION" OR APPROVED EQUAL. THIS INCLUDES THEIR REQUIREMENTS FOR EXPANSION JOINTS, JOINT FILLERBOARD, WELDED WIRE FABRIC AND CONCRETE MIX.
  - ALL STAMPED CONCRETE SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF "BOMANITE CORPORATION" OR APPROVED EQUAL. THE CONTRACTOR PERFORMING THE WORK MUST SUBMIT A LETTER FROM THE ABOVE TOOLING MANUFACTURER STATING THAT THE INSTALLER OF THE WORK IS LICENSED TO PERFORM THE SPECIFIED WORK.
  - ALL WORK PERFORMED MUST BE OF THE SAME MANUFACTURER AND ALL MATERIALS USED, INCLUDING CONCRETE MIX, MUST BE THE SAME FOR THE ENTIRE PROJECT. COLOR HARDENERS AND RELEASE AGENTS AS RECOMMENDED BY THE TOOLING MANUFACTURER SHALL BE USED.
  - BEDDING SAND SHALL CONFORM TO THE GRADING REQUIREMENTS OF ASTM C 33 AS SHOWN IN TABLE 1.
  - STAMPED CONCRETE TO FOLLOW EXPANSION AND CONTROL JOINT PATTERN OF THE ROADWAY.



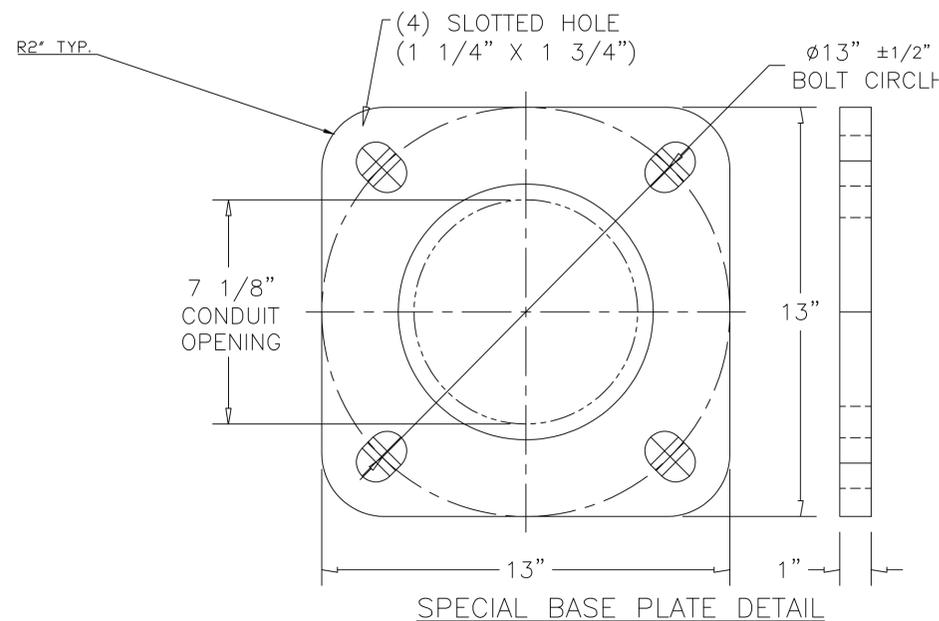
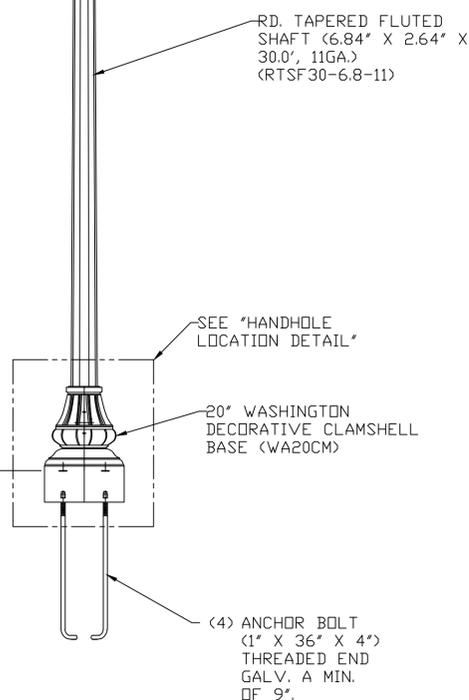
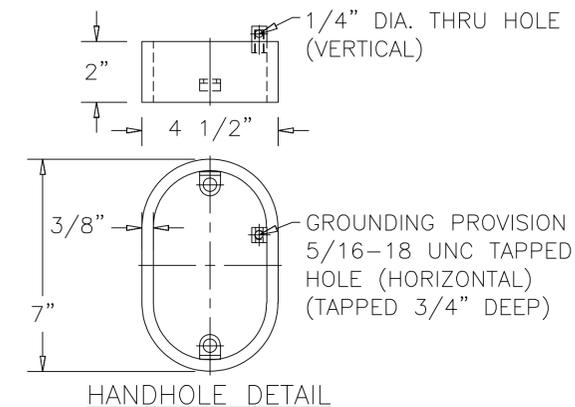
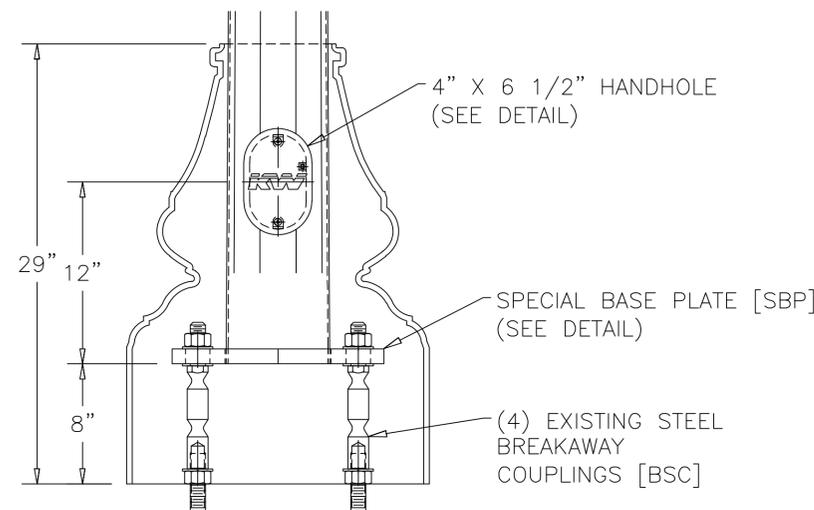
**TYPICAL MEDIAN STAMPED CONCRETE DETAIL**

<b>CITY OF CELINA</b>			
<b>STREET DETAILS 11</b>			
<b>STANDARD DETAILS</b>			
			
DESIGNED BY: C.O.	REV. BY: C.O.	DATE: 5-09-16	SYMBOL: DATE: SEPTEMBER, 2019
CHECKED BY: G.J.	SCALE: NOT TO SCALE	SHEET NO.: ST- 11	

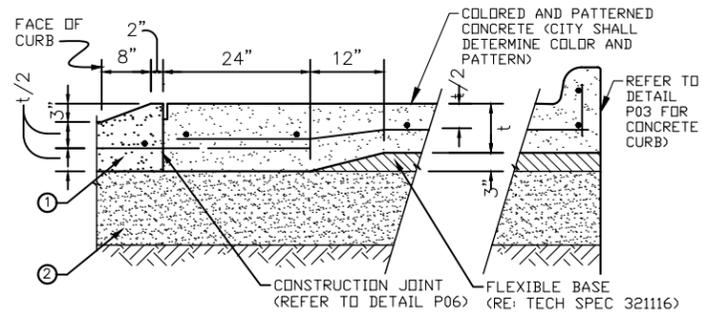


	SPECIFICATION
POLE	RTSF30-8.0-11-(F)-26S-SBP-BSC-WA24CM W/ (2) RA18-06-2-(F)-S
FIXTURE	RFM-108W48LED3K-G2-R3M-HVU-DMG-RCD7-BK
CONTROL NODE	480V UBICELL: ALC-BASE-300-COM-LTE-100-QTLEC21A_BLK

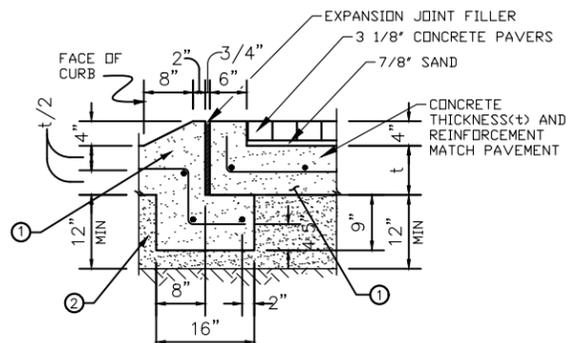
MATERIAL SPECIFICATIONS:	
POLE SHAFT:	COMM. GRADE STEEL, 55 K.S.I. MIN. YIELD
BASE PLATE:	ASTM A36, 36 K.S.I. MIN. YIELD
DECORATIVE BASE:	356 ALLOY
ANCHOR BOLT:	ASTM F1554, 55 K.S.I. MIN. YIELD
FINISH:	
FINISH COLOR TO BE SPECIFIED. (F)	



<b>CITY OF CELINA</b>			
<b>STREET DETAILS 12</b>			
<b>STANDARD DETAILS</b>			
			
DESIGNED BY: C.O	REV. BY: C.O	DATE: 5-09-16	SYMBOL: DATE: SEPTEMBER, 2019
CHECKED BY: G.J	SCALE: NOT TO SCALE	SHEET NO.: ST-12	



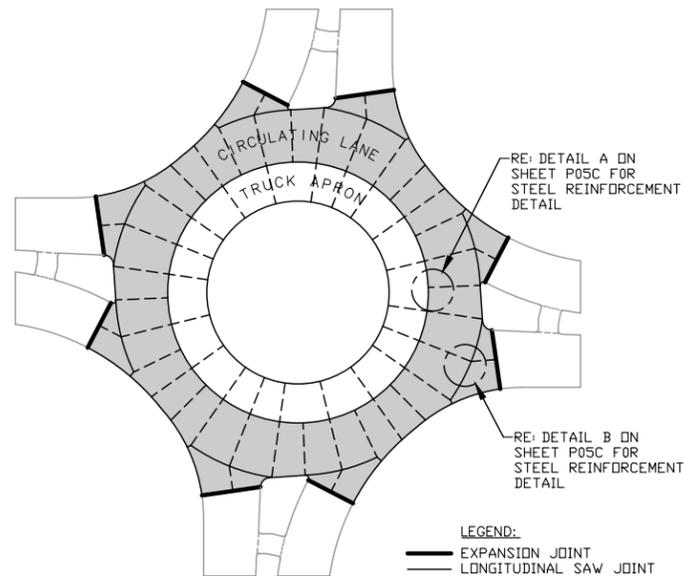
**3" MOUNTABLE TRUCK APRON CURB**



**4" MOUNTABLE CURB**

**LEGEND:**

- ① REINFORCED CONCRETE PAVEMENT MONOLITHIC CURB (CLASS P1 (MACHINE FINISHED) OR P2 (HAND FINISHED)) (REFER TO DETAIL P05C FOR REINFORCEMENT).
- ② REFER TO PLANS FOR SUBGRADE REQUIREMENTS (EITHER LIME OR FLEX BASE).



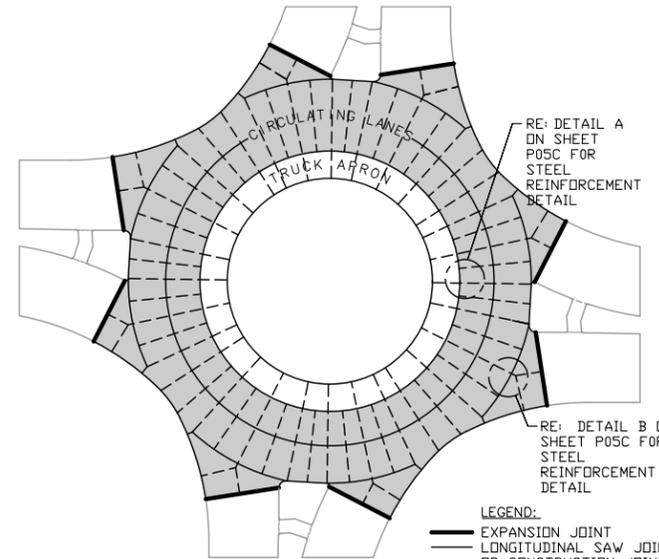
**LEGEND:**

- EXPANSION JOINT
- LONGITUDINAL SAW JOINT OR CONSTRUCTION JOINT
- - - TRANSVERSE SAW JOINT OR CONSTRUCTION JOINT

**NOTES:**

1. REFER TO TECHNICAL SPECIFICATION 321313 FOR CONCRETE PAVEMENT.
2. ALL PAVEMENT JOINTS ARE EITHER SAWED CONTRACTION OR CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
3. TRANSVERSE JOINT SPACING: DESIRABLE: 15', MAXIMUM: 18', MINIMUM: 4'.
4. LONGITUDINAL JOINT SPACING SHALL MATCH LANE LINES UNLESS NOTED OTHERWISE.
5. ALL SAWCUTS SHALL BE 1/8" TO 1/4" WIDE AND ONE-FOURTH THE DEPTH OF THE PAVEMENT THICKNESS.
6. ALL PAVEMENT JOINTS SHALL BE SEALED. JOINT SEALANT SHALL BE PROVIDED IN ACCORDANCE TECHNICAL SPECIFICATION 321373.
7. ROUNDABOUT REINFORCING SHALL BE PLACED RADIALY IN ACCORDANCE WITH DETAIL P05C.
8. ROUNDABOUT JOINTING PLAN SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

**SINGLE LANE ROUNDABOUT JOINTING LAYOUT**



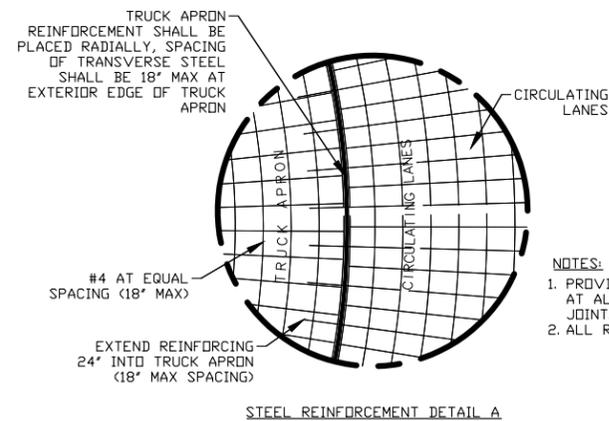
**LEGEND:**

- EXPANSION JOINT
- LONGITUDINAL SAW JOINT OR CONSTRUCTION JOINT
- - - TRANSVERSE SAW JOINT OR CONSTRUCTION JOINT

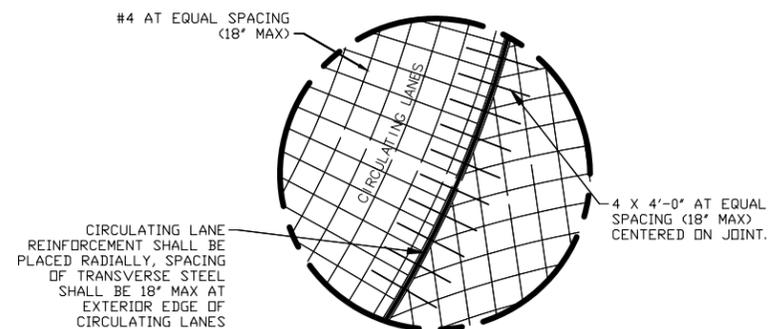
**NOTES:**

1. REFER TO TECHNICAL SPECIFICATION 321313 FOR CONCRETE PAVEMENT.
2. ALL PAVEMENT JOINTS ARE EITHER SAWED CONTRACTION OR CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
3. TRANSVERSE JOINT SPACING: DESIRABLE: 15', MAXIMUM: 18', MINIMUM: 4'.
4. LONGITUDINAL JOINT SPACING SHALL MATCH LANE LINES UNLESS NOTED OTHERWISE.
5. ALL SAWCUTS SHALL BE 1/8" TO 1/4" WIDE AND ONE-FOURTH THE DEPTH OF THE PAVEMENT THICKNESS.
6. ALL PAVEMENT JOINTS SHALL BE SEALED. JOINT SEALANT SHALL BE PROVIDED IN ACCORDANCE TECHNICAL SPECIFICATION 321373.
7. ROUNDABOUT REINFORCING SHALL BE PLACED RADIALY IN ACCORDANCE WITH DETAIL P05C.
8. ROUNDABOUT JOINTING PLAN SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

**MULTI-LANE ROUNDABOUT JOINTING LAYOUT**



STEEL REINFORCEMENT DETAIL A



STEEL REINFORCEMENT DETAIL B

**ROUNDABOUT STEEL REINFORCEMENT LAYOUT**

**CITY OF CELINA  
STREET DETAILS 13  
STANDARD DETAILS**



DESIGNED BY:	REV. BY:	DATE:	SYMBOL:	DATE: SEPTEMBER, 2019
CHECKED BY:	SCALE: NOT TO SCALE	9-2019		SHEET NO. ST-13

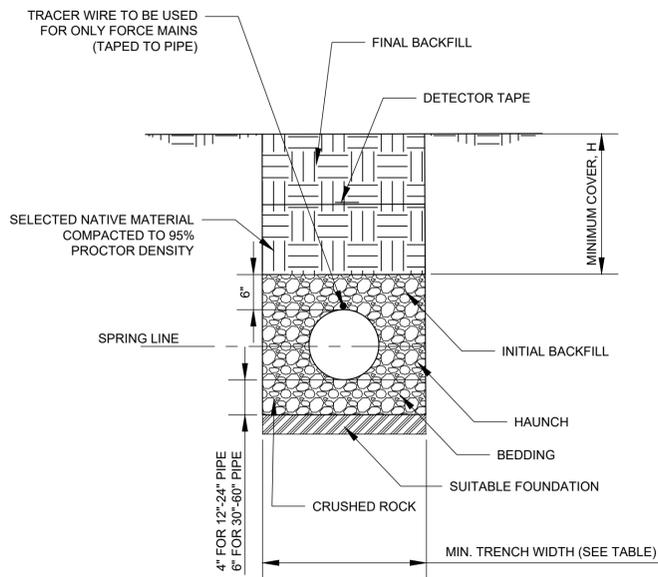


TABLE 1: RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAMETER	MINIMUM TRENCH WIDTH
12"	30"
15"	34"
18"	39"
24"	48"
21"	43"
30"	56"
36"	64"
42"	72"
48"	80"
60"	96"

TABLE 2: MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAMETER	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD)*
12"-48"	12"	48"
60"	24"	60"

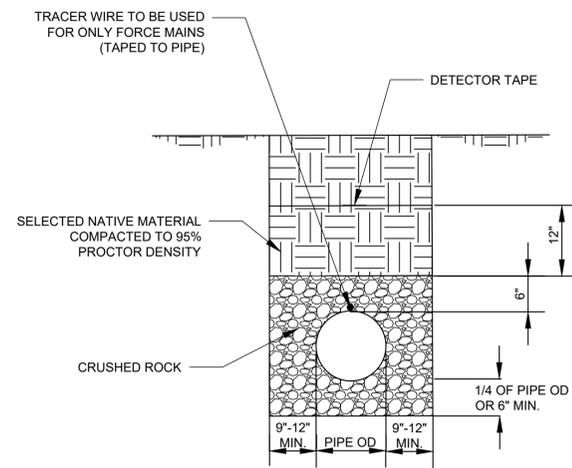
\* VEHICLE IN EXCESS OF 75FT MAY REQUIRE ADDITIONAL COVER

TABLE 3: MAXIMUM COVER FOR ADS SANITITE HP PIPE IN FEET

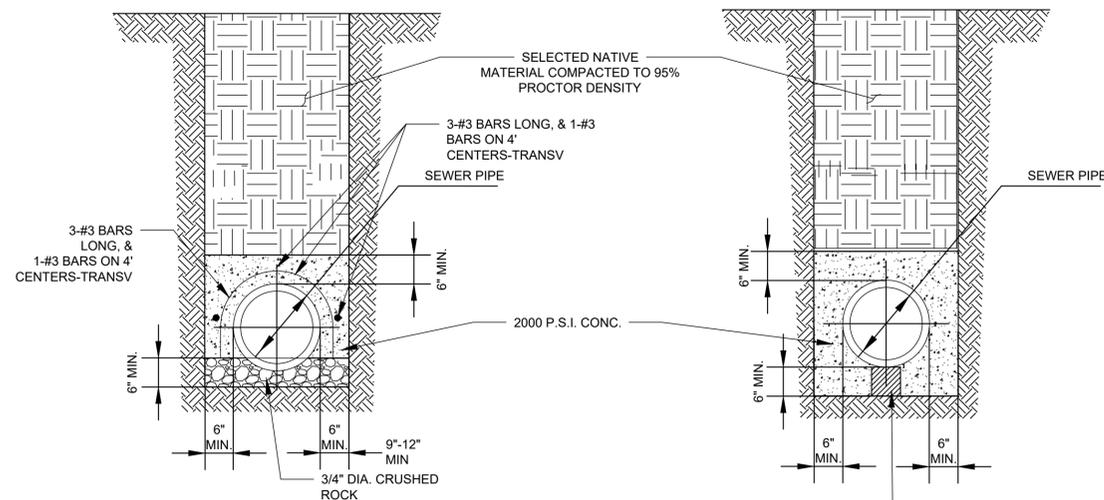
PIPE DIAMETER	COMPACTED
12"	40
15"	41
18"	43
21"	45
24"	37
30"	30
36"	29
42"	32
48"	33
60"	31

- NOTES:
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION
  - MEASURES SHALL BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL.
  - THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR ALL MATERIAL SPECIFICATIONS TO DESIGN ENGINEER FOR REVIEW AND APPROVAL.
  - FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
  - BEDDING: SUITABLE MATERIAL SHALL BE CLASS I (CRUSH ROCK  $\frac{1}{2}$  INCH TO 1  $\frac{1}{2}$  INCHES IN SIZE). COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHT LISTED. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" FOR 12"-24" DIAMETER PIPE; 6" FOR 30"-60" DIAMETER PIPE. THE MIDDLE  $\frac{1}{3}$  BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED.
  - INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I AND SHALL BE IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE.
  - MINIMUM COVER SHALL BE 12" FOR PIPES SMALLER OR EQUAL TO 48" AND 24" FOR PIPES 60" AND BIGGER MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE OR RIGID PAVEMENT. MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY (SPD).

**WASTEWATER PIPE EMBEDMENT DETAIL (SANITITE HP)**



**WASTEWATER PIPE EMBEDMENT  
DETAIL (PVC)**  
N.T.S.

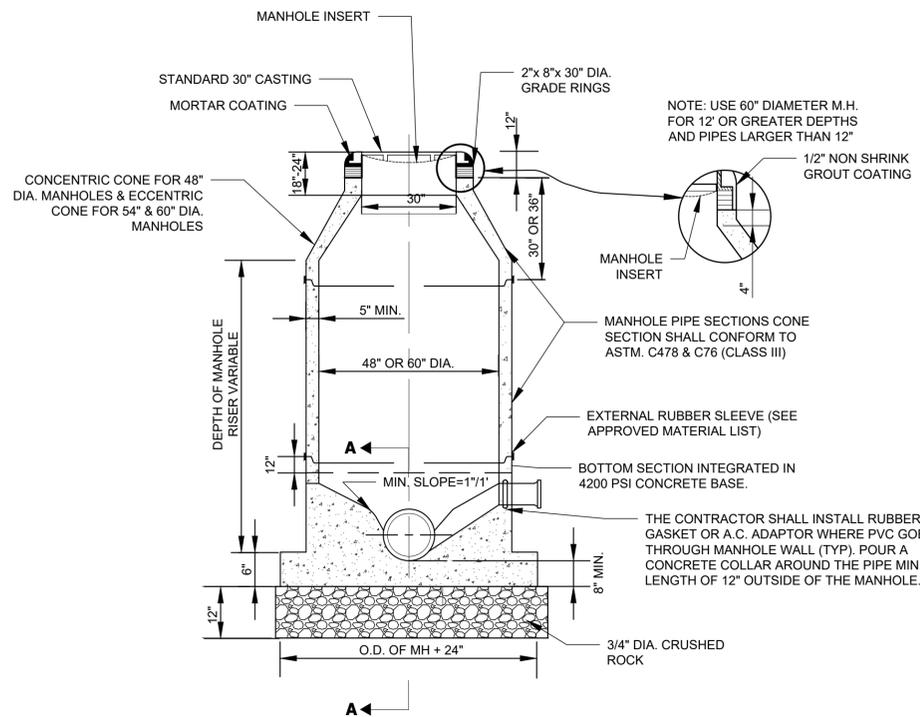


**CAP DETAIL**  
N.T.S.

**ENCASEMENT DETAIL**  
N.T.S.

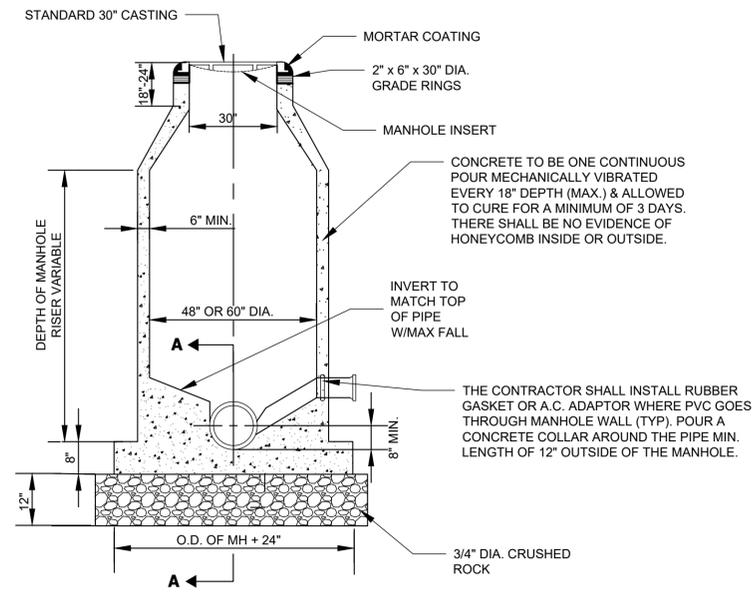
**CITY OF CELINA**  
**WASTEWATER DETAILS 1**  
**STANDARD DETAILS**

DESIGNED BY: C.O	REV. BY	DATE	SYMBOL	REV. DATE: MAY, 2020
CHECKED BY: K.B	C.O			
	SCALE: NOT TO SCALE			SHEET NO.: WW1



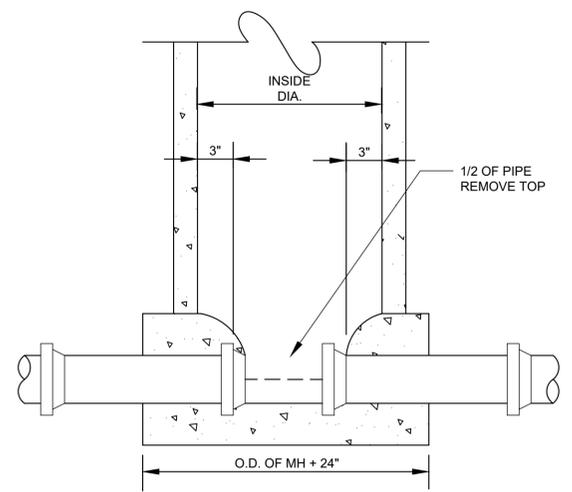
**PRECAST CONCRETE MANHOLE (ASTM C478)**

N.T.S.



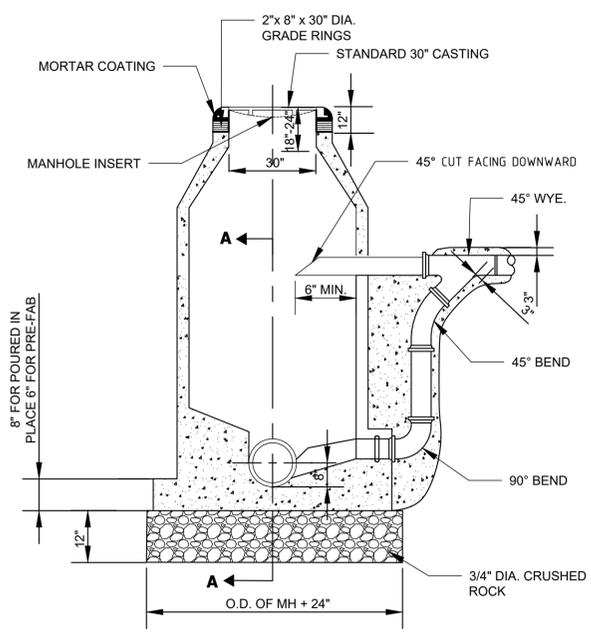
**CAST IN PLACE CONCRETE MANHOLE**

N.T.S.



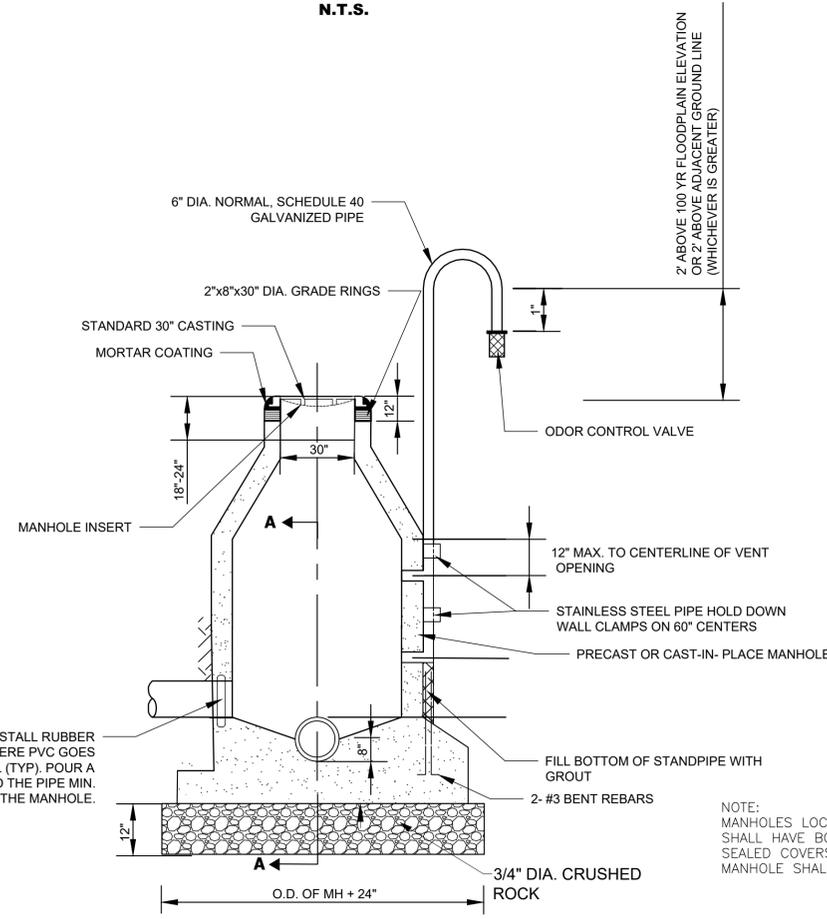
**MANHOLE SECTION A-A**

N.T.S.



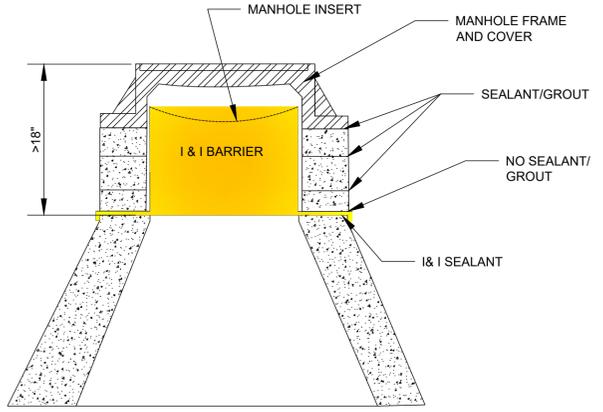
**STANDARD DROP CONNECTION TO MANHOLE**

N.T.S.



**VENTED MANHOLE**

N.T.S.



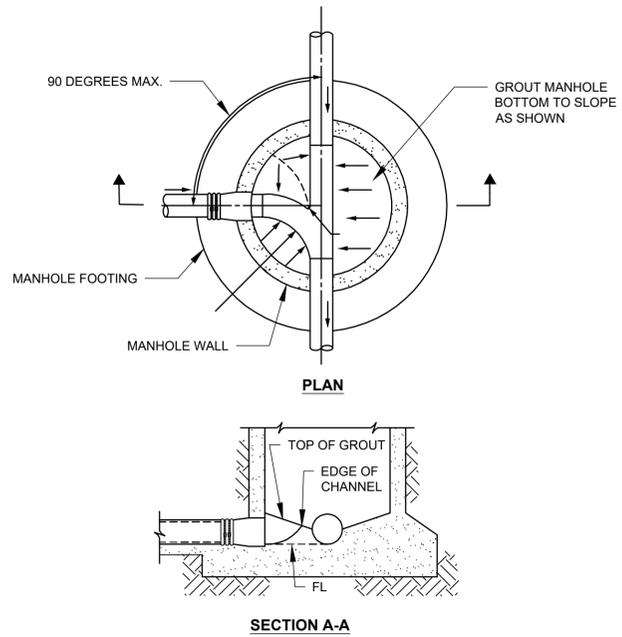
**I & I BARRIER INSTALLATION**

N.T.S.

THE CONTRACTOR SHALL INSTALL RUBBER GASKET OR A.C. ADAPTOR WHERE PVC GOES THROUGH MANHOLE WALL (TYP). POUR A CONCRETE COLLAR AROUND THE PIPE MIN. LENGTH OF 12\"/>

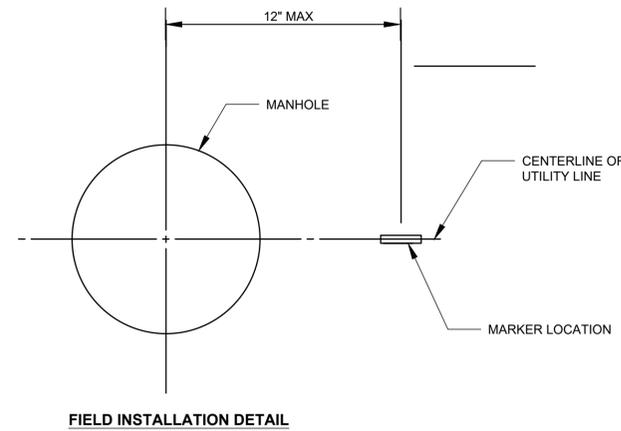
NOTE: MANHOLES LOCATED IN FLOODPLAIN SHALL HAVE BOLTED DOWN AND SEALED COVERS. EVERY THIRD MANHOLE SHALL BE VENTED.

<b>CITY OF CELINA</b>			
<b>WASTEWATER DETAILS 2</b>			
<b>STANDARD DETAILS</b>			
 Life Connected.			
DESIGNED BY: C.O	REV. BY: C.O	DATE: SCALE: NOT TO SCALE	SYMBOL: REV. DATE: MAY, 2020
CHECKED BY: K.B			SHEET NO.: W2



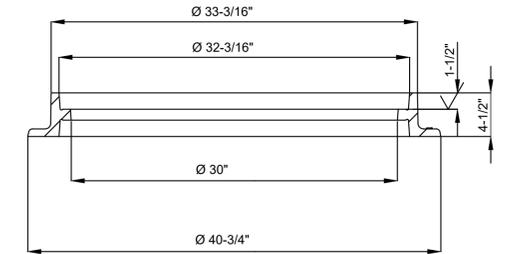
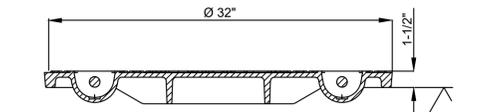
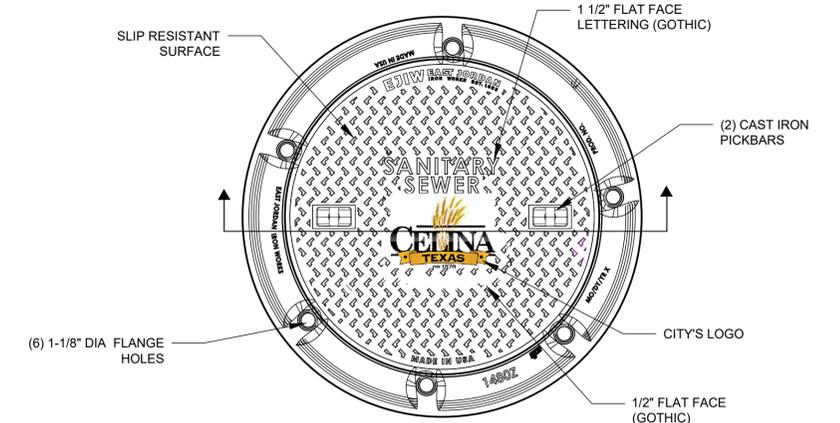
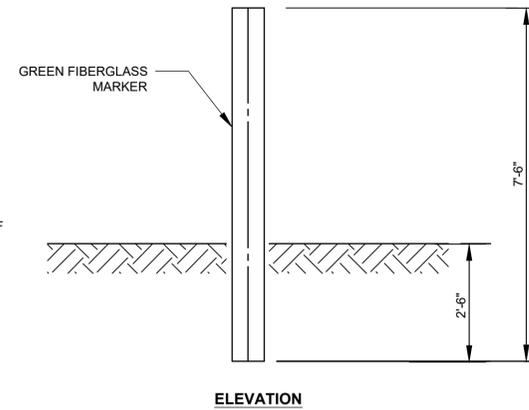
**WASTEWATER MANHOLE LINE INTERSECTION**

N.T.S.



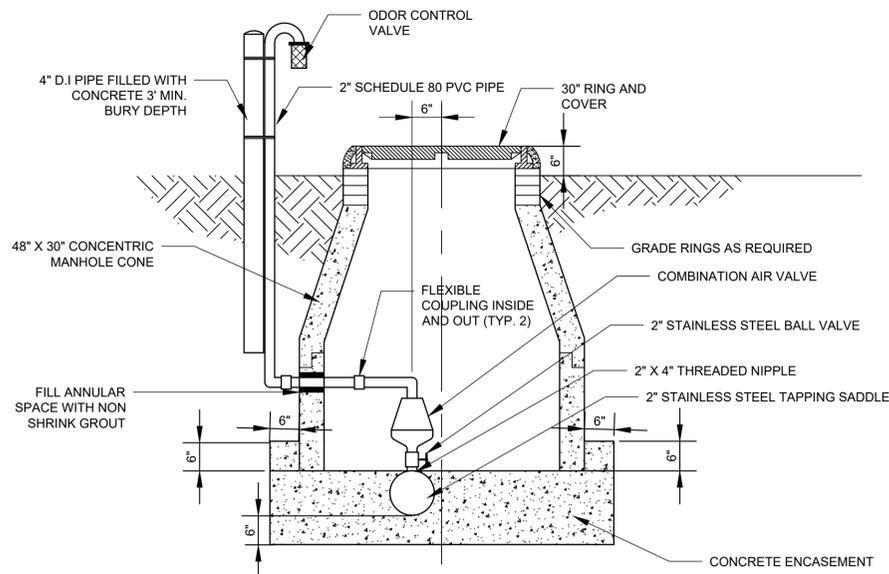
**OFFSITE WASTEWATER MARKER**

N.T.S.



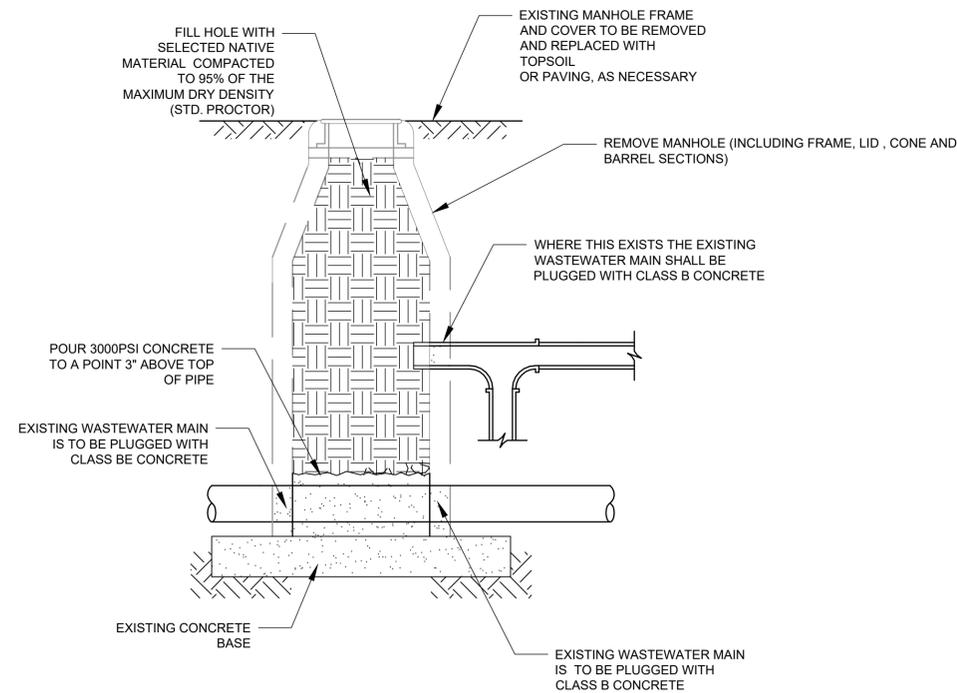
**MANHOLE RING & COVER**

N.T.S.



**2" AIR RELEASE VALVE FOR FORCE MAIN**

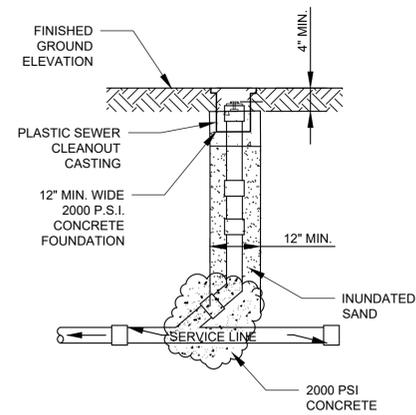
N.T.S.



**MANHOLE ABANDONMENT**

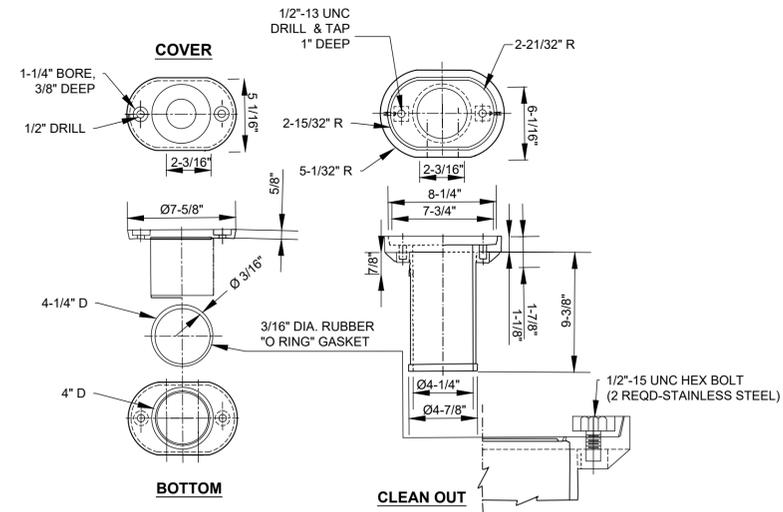
N.T.S.

<b>CITY OF CELINA</b>			
<b>WASTEWATER DETAILS 3</b>			
<b>STANDARD DETAILS</b>			
 Life Connected.			
DESIGNED BY: C.O	REV. BY: C.O	DATE:	REV. DATE: MAY, 2020
CHECKED BY: G.J	SCALE: NOT TO SCALE		SHEET NO. WW3



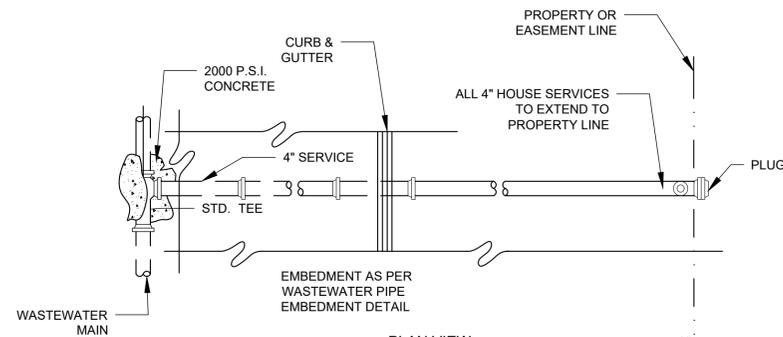
**WASTEWATER SERVICE CLEAN-OUT DETAILS**

N.T.S.



**WASTEWATER LATERAL CLEANOUT  
FRAME AND COVER**

N.T.S.



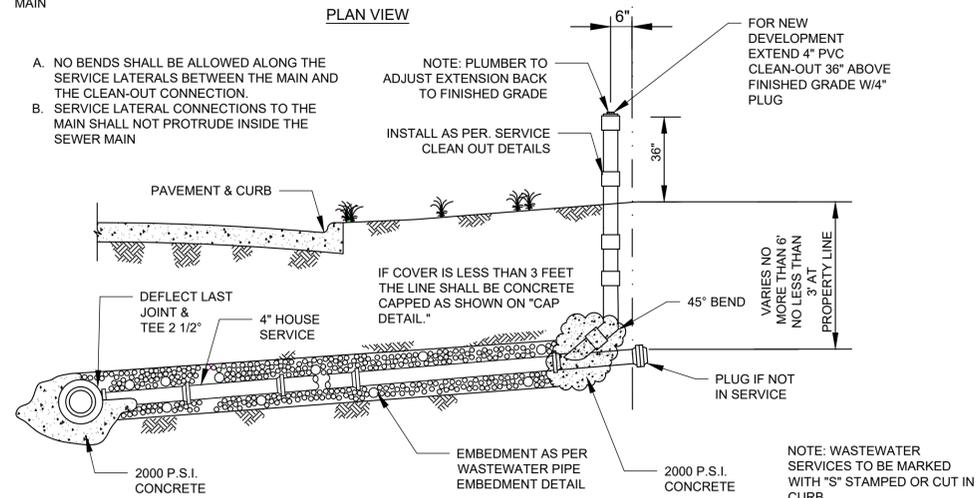
PLAN VIEW

- A. NO BENDS SHALL BE ALLOWED ALONG THE SERVICE LATERALS BETWEEN THE MAIN AND THE CLEAN-OUT CONNECTION.
- B. SERVICE LATERAL CONNECTIONS TO THE MAIN SHALL NOT PROTRUDE INSIDE THE SEWER MAIN

NOTE: PLUMBER TO ADJUST EXTENSION BACK TO FINISHED GRADE

FOR NEW DEVELOPMENT EXTEND 4" PVC CLEAN-OUT 36" ABOVE FINISHED GRADE W/4" PLUG

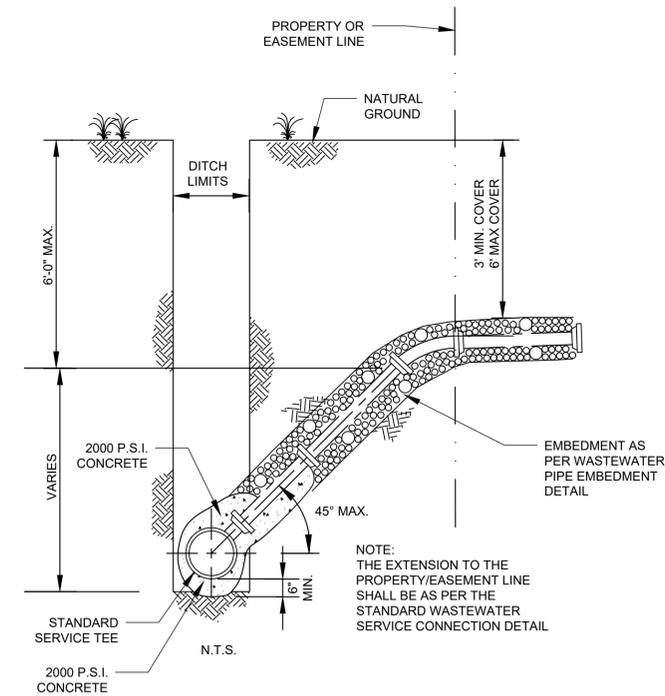
INSTALL AS PER SERVICE CLEAN OUT DETAILS



PROFILE VIEW

**STANDARD RESIDENTIAL WASTEWATER SERVICE  
CONNECTION**

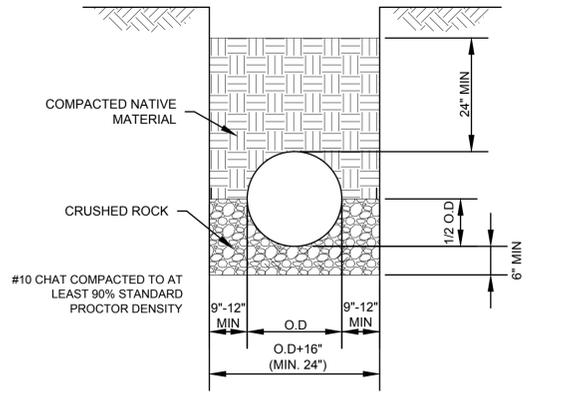
N.T.S.



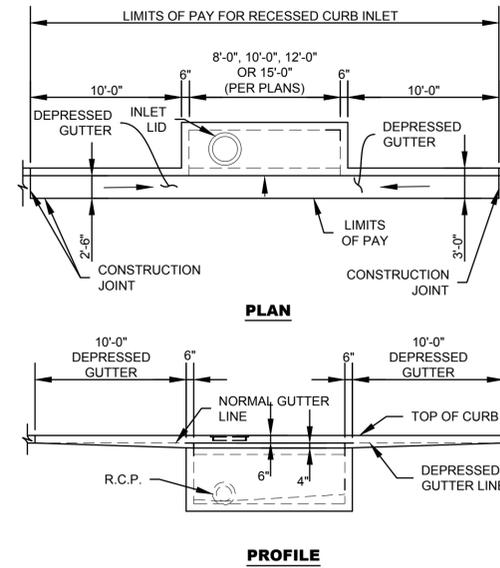
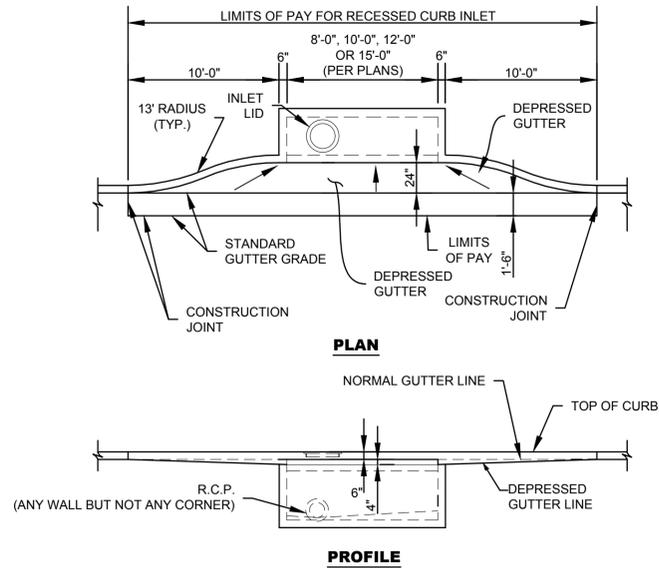
**STANDARD DEEP CUT CONNECTION**

N.T.S.

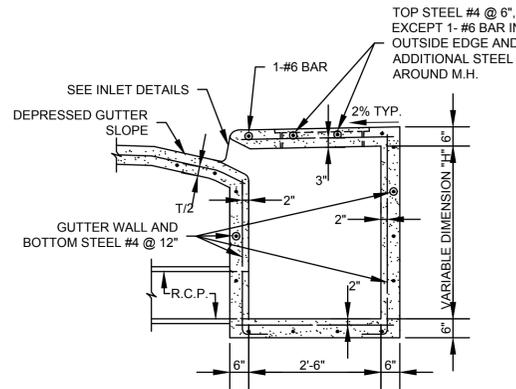
<b>CITY OF CELINA</b>				
<b>WASTEWATER DETAILS 4</b>				
<b>STANDARD DETAILS</b>				
 Life Connected.				
DESIGNED BY: CO	REV. BY: C.O	DATE:	SYMBOL:	REV. DATE: MAY, 2020
CHECKED BY: KB	SCALE: NOT TO SCALE			SHEET NO.: WW 4



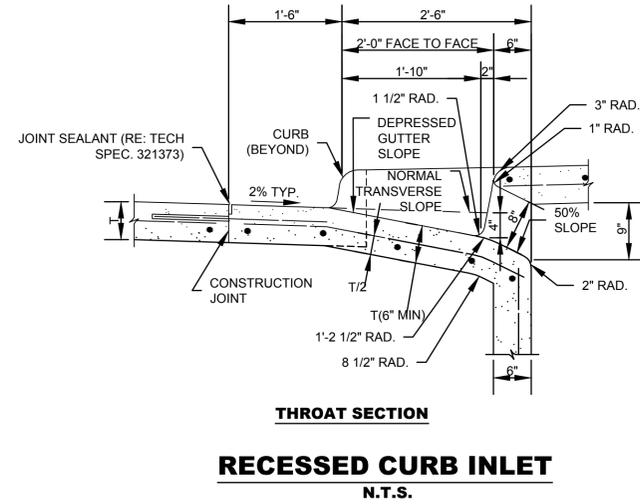
**EMBEDMENT FOR STORM SEWER LINES**  
N.T.S.



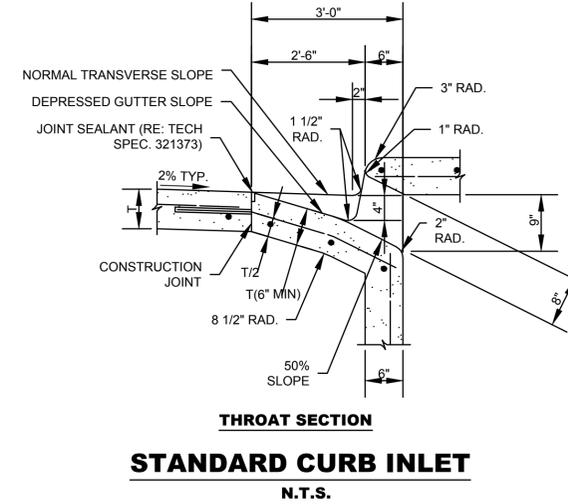
- NOTES CURB INLET**
1. TOP OF INLET TO SLOPE 2% TOWARDS STREET OR PER PLAN
  2. CENTER SUPPORT BEAM REQUIRED FOR 15' STANDARD CURB INLETS.
  3. MAXIMUM 12' LENGTH INLET FOR RESIDENTIAL STREETS. ADDITIONAL REINFORCING STEEL TO BE PLACED AROUND MANHOLE OPENING.
  4. MANHOLE TO BE PLACED AT LOW END OF INLET. TWO MANHOLES ARE REQUIRED ON 15' AND 20' INLETS ONLY IF THE INSIDE HEIGHT OF THE INLET IS LESS THAN 4 FEET



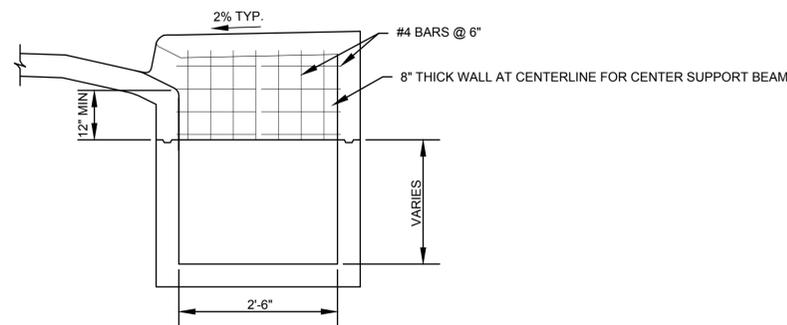
**INLET SECTION FOR RECESSED AND STANDARD INLETS**  
N.T.S.



**RECESSED CURB INLET**  
N.T.S.

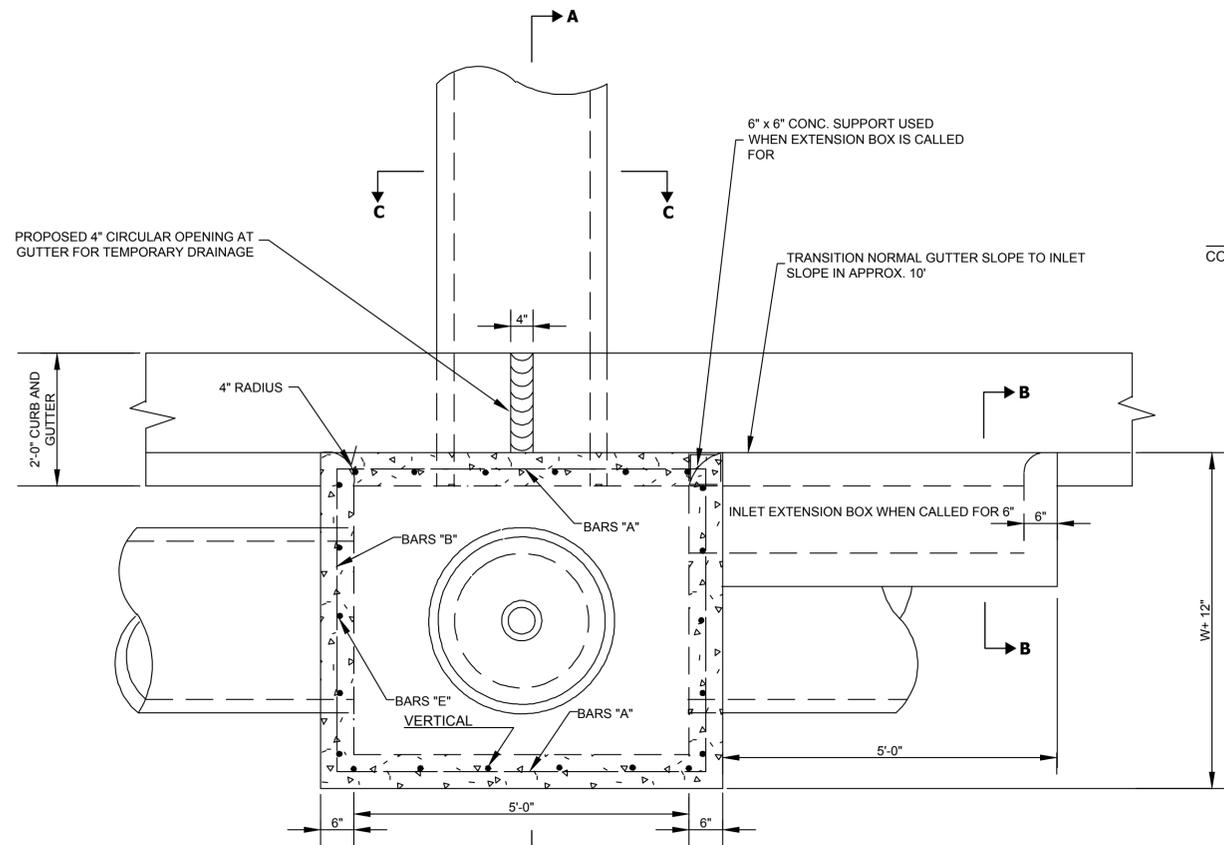


**STANDARD CURB INLET**  
N.T.S.

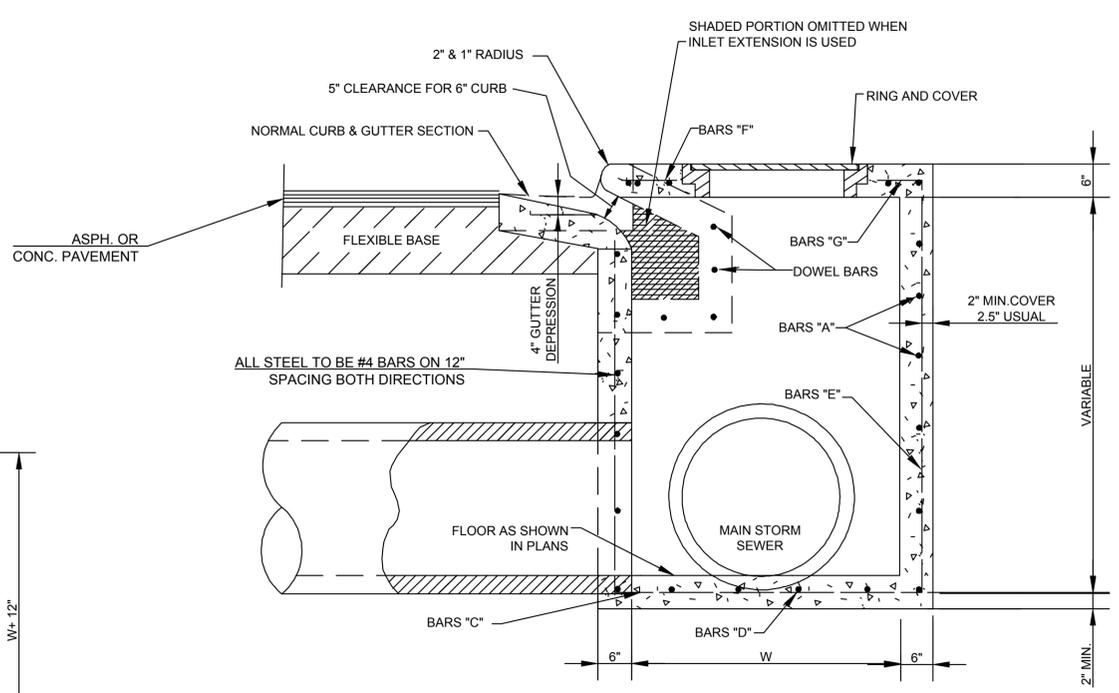


**CENTER SUPPORT BEAM FOR 15' AND 20' RECESSED AND STANDARD INLETS**  
N.T.S.

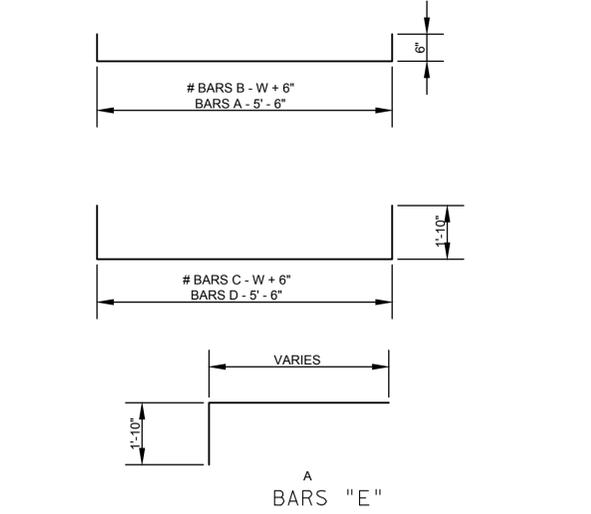
<b>CITY OF CELINA</b>			
<b>STORM DRAIN DETAILS 1</b>			
<b>STANDARD DETAILS</b>			
			
CHECKED BY: C.O	REV. BY	DATE	SYMBOL
CHECKED BY: G.J			
DATE: JULY 2018			SCALE: NOT TO SCALE
SHEET NO.: SD1			



**PLAN**

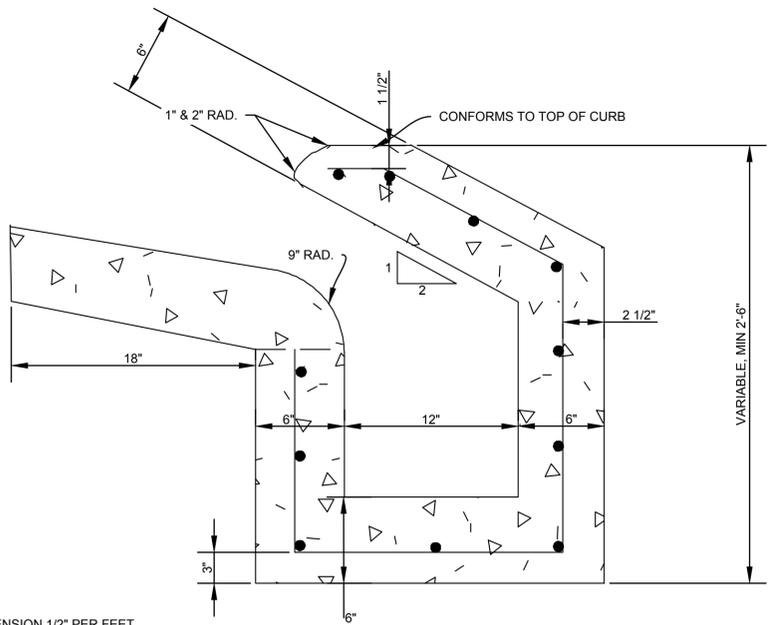


**SECTION A-A**

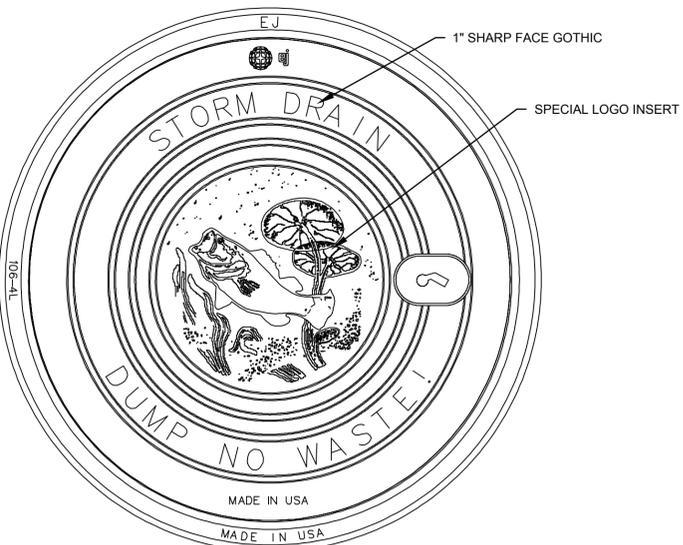


INLET TYPE	W	MAX PIPE SIZE ALLOWED (DIA.)
A	3' - 0"	24"
A - 1	4' - 0"	36"
A - 2	5' - 0"	48"
A - 3	6' - 0"	60"

**INLET SECTION FOR RECESSED AND STANDARD INLETS**

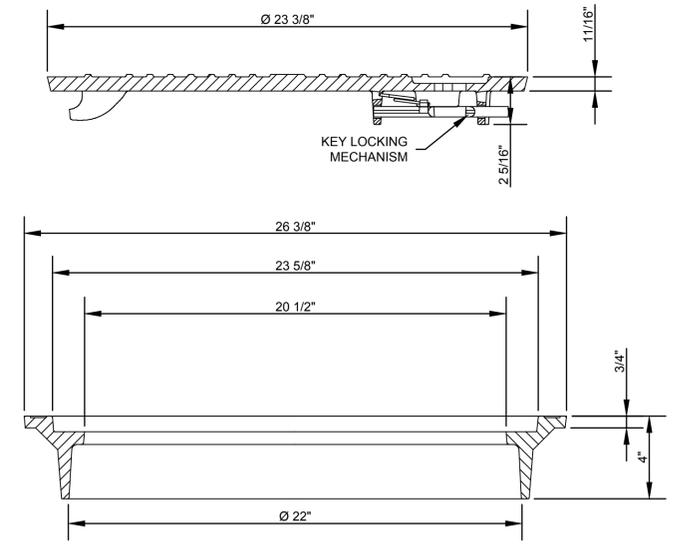


**SECTION B - B**



**INLET RING & COVER DETAIL**

N.T.S.



**FRAME**

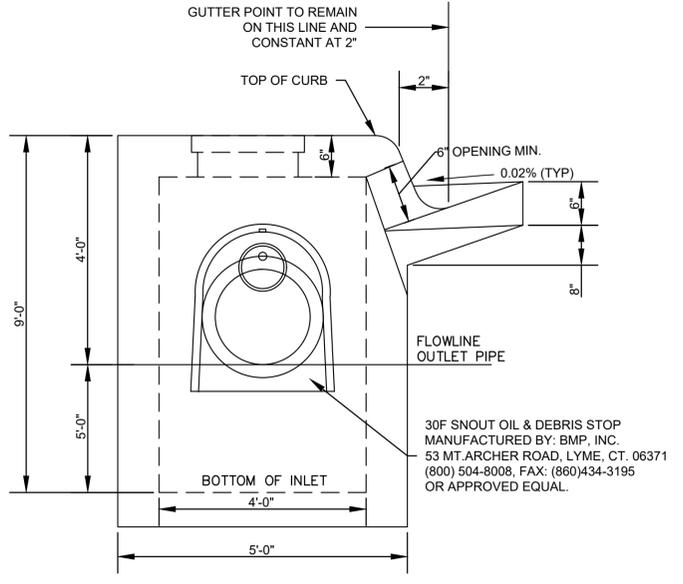
NOTE  
SLOPE BOTTOM OF INLET EXTENSION 1/2" PER FEET TOWARD INLET. ALL STEEL TO BE #4 BARS ON 12" SPACING NORMAL TO THE CROSS SECTION

**INLET EXTENSION**  
N.T.S.

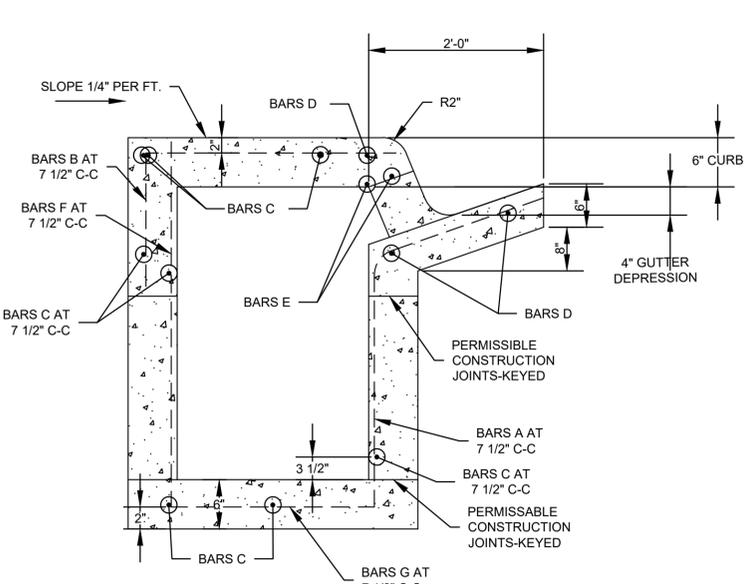
**CITY OF CELINA**  
**STORM DRAIN DETAILS 2**  
**STANDARD DETAILS**

CHECKED BY: C.O	REV. BY	DATE	SYMBOL	DATE: JULY 2018
CHECKED BY: G.J	SCALE: NOT TO SCALE	SHEET NO.: SD2		

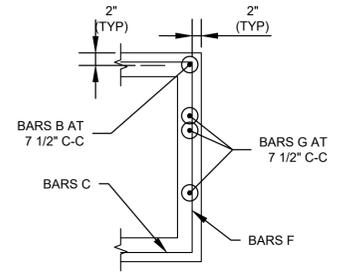




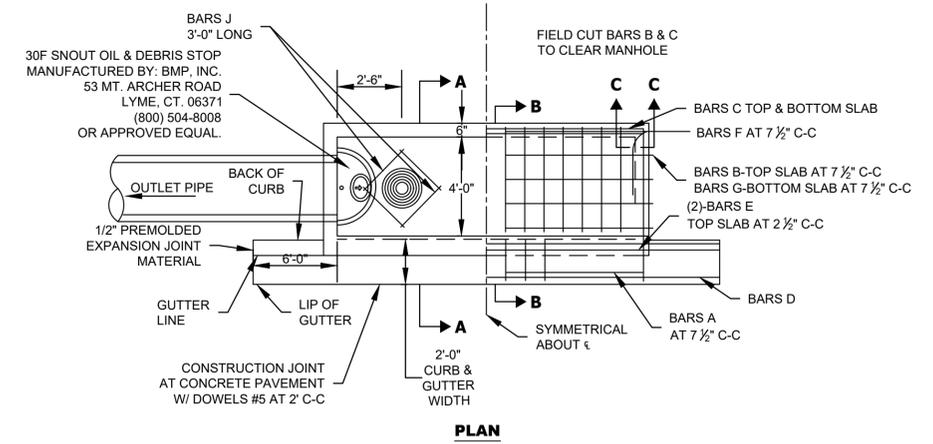
**SECTION A-A**



**SECTION B-B**



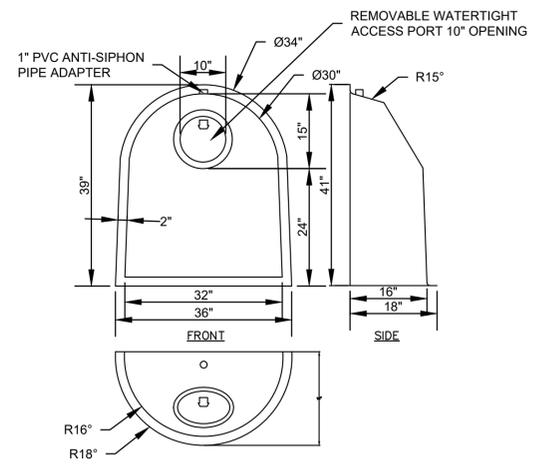
**SECTION C-C**



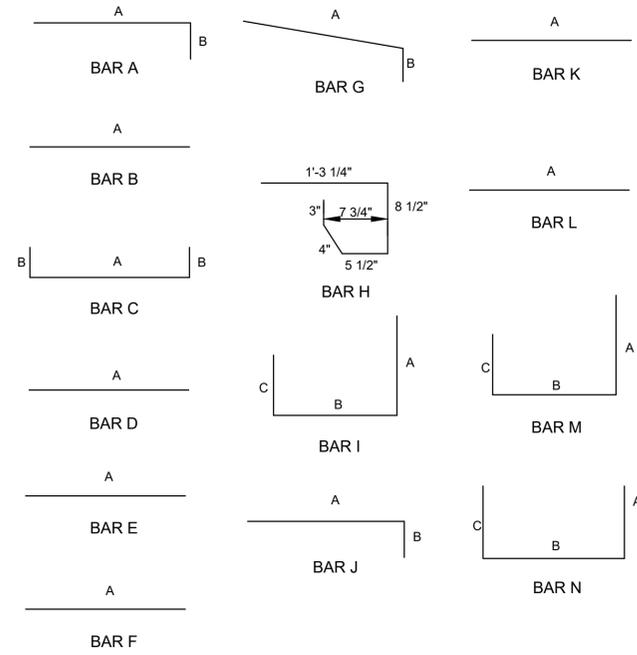
**PLAN**

- GENERAL NOTES:**
1. ALL CONCRETE SHALL BE CLASS "A" CONCRETE.
  2. REINFORCING BARS SHALL BE STANDARD GRADE STEEL, DEFORMED REINFORCING BARS OF DIAMETER AND LENGTH AS SHOWN.
  3. CHAMFER ALL EXPOSED CORNERS 3/8" EXCEPT WHERE OTHERWISE NOTED.
  4. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
  5. FIELD CUT AND BEND BARS AS NECESSARY TO ACCOMMODATE STORM SEWER PIPE.
  6. RING AND COVER SHALL BE APPROVED BY THE OWNER AND INSTALLED BY THE CONTRACTOR.
  7. DEBRIS SEPARATOR SHALL BE 30F SNOOT OIL & DEBRIS STOP MANUFACTURED BY: BMP, INC. 53 MT ARCHER ROAD, LYME, CT. 06371 (880) 504-8008 OR APPROVED EQUAL.
  8. CURB INLET DEBRIS SEPARATORS AREA ONLY TO BE USED FOR SINGLE INLET STORM SYSTEMS UNLESS APPROVED BY CITY ENGINEER. SYSTEMS WITH MULTIPLE INLETS SHALL USE A LARGE DEBRIS SEPARATOR.
  9. LOCATION OF MANHOLE OPENING TO BE AT OUTFALL END, UNLESS OTHERWISE DIRECTED BY THE OWNER.

**CURB INLET DEBRIS SEPARATOR DETAIL**  
N.T.S.



**30F SNOOT OIL AND DEBRIS STOP**  
N.T.S.

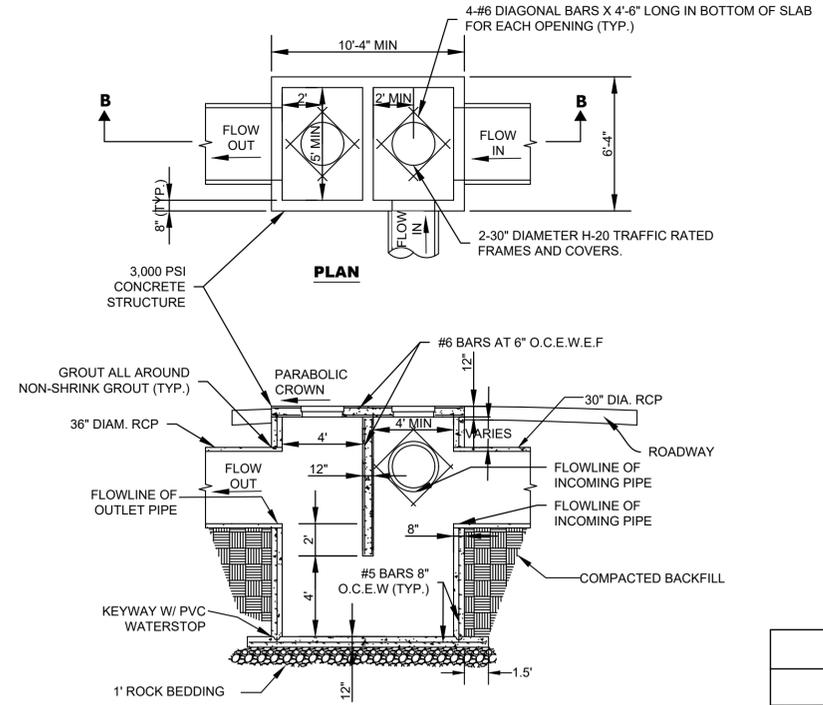


**BAR DIAGRAMS**

**REINFORCING STEEL SCHEDULE**  
DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8")	NO. REQD.	BAR DIMENSIONS		
				A	B	C
8	A	3	12	3'-2"	0'-3"	-
	B	3	1	6'-10"	-	-
	C	4	15	8'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	4	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
10	A	3	10	3'-2"	0'-3"	-
	B	3	2	8'-10"	-	-
	C	4	16	10'-8"	0'-6"	-
	D	4	4	4'-8"	-	-
	E	5	6	10'-8"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	15	*	*	*
	I	4	8	4'-8"	3'-2"	3'-2"
	J	5	9	3'-2"	1'-3"	-
	K	4	5	2'-3"	-	-
	L	4	5	4'-3"	-	-
	M	5	9	4'-3"	3'-2"	3'-9"
12	A	3	12	3'-2"	0'-3"	-
	B	3	2	10'-10"	-	-
	C	4	16	12'-8"	0'-6"	-
	D	4	4	4'-8"	-	-
	E	5	6	12'-8"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	18	*	*	*
	I	4	10	4'-8"	3'-2"	3'-2"
	J	5	9	3'-2"	1'-3"	-
	K	4	5	2'-3"	-	-
	L	4	5	4'-3"	-	-
	M	5	9	4'-3"	3'-2"	3'-9"

\* SEE DIAGRAM FOR DIMENSIONS

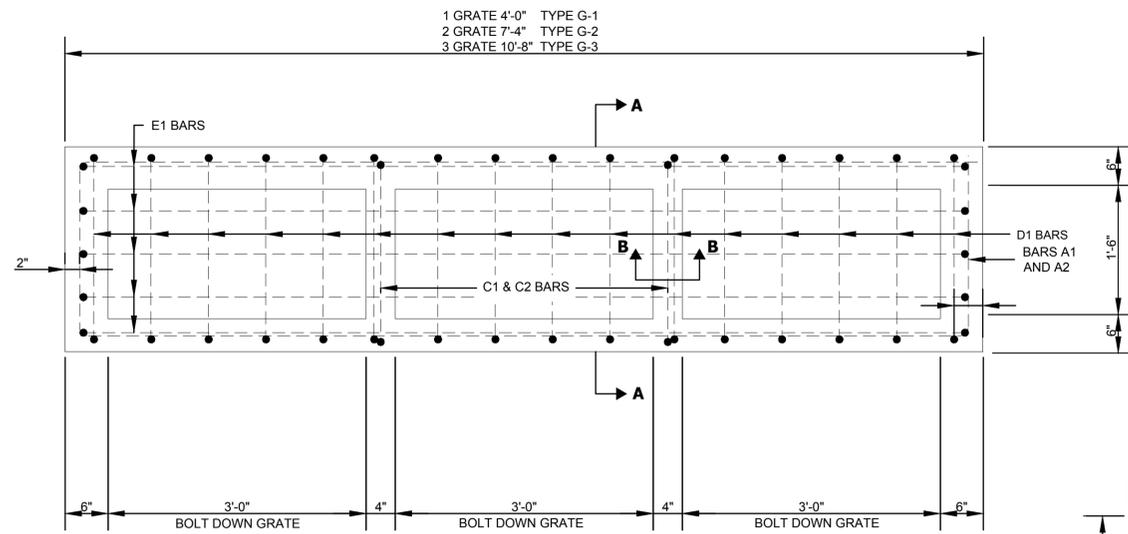


**LARGE DEBRIS SEPARATOR DETAIL**  
N.T.S.

**CITY OF CELINA**  
**STORM DRAIN DETAILS 4**  
**STANDARD DETAILS**

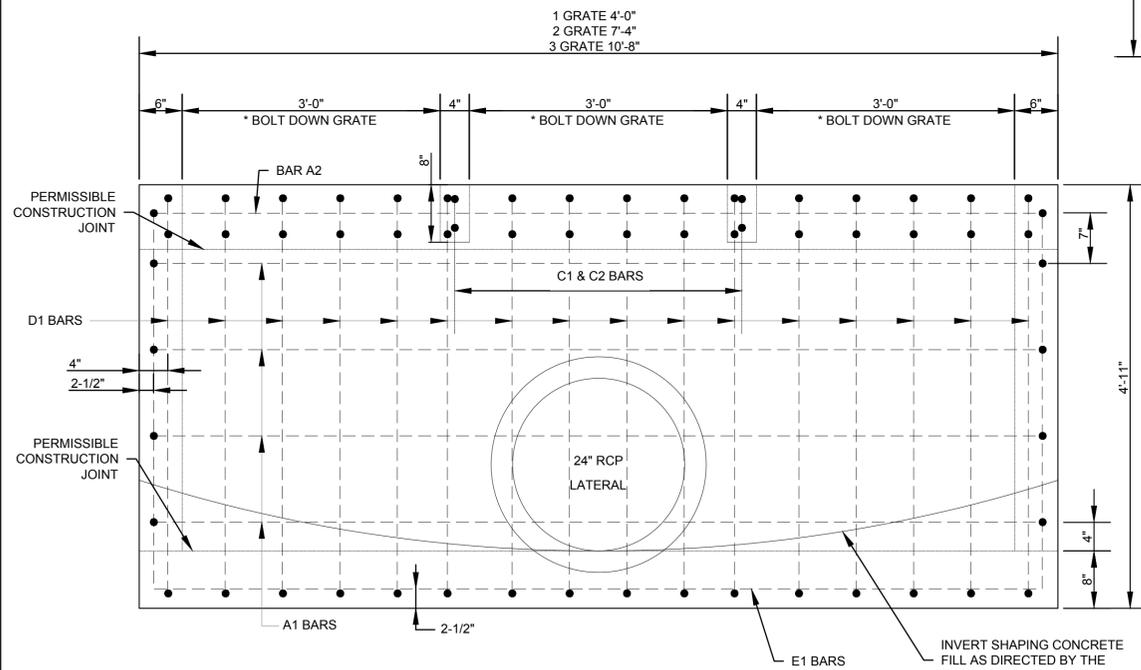


CHECKED BY: C.O	REV. BY:	DATE:	SYMBOL:	DATE: JULY 2018
CHECKED BY: G.J	SCALE: NOT TO SCALE			SHEET NO.: SD4



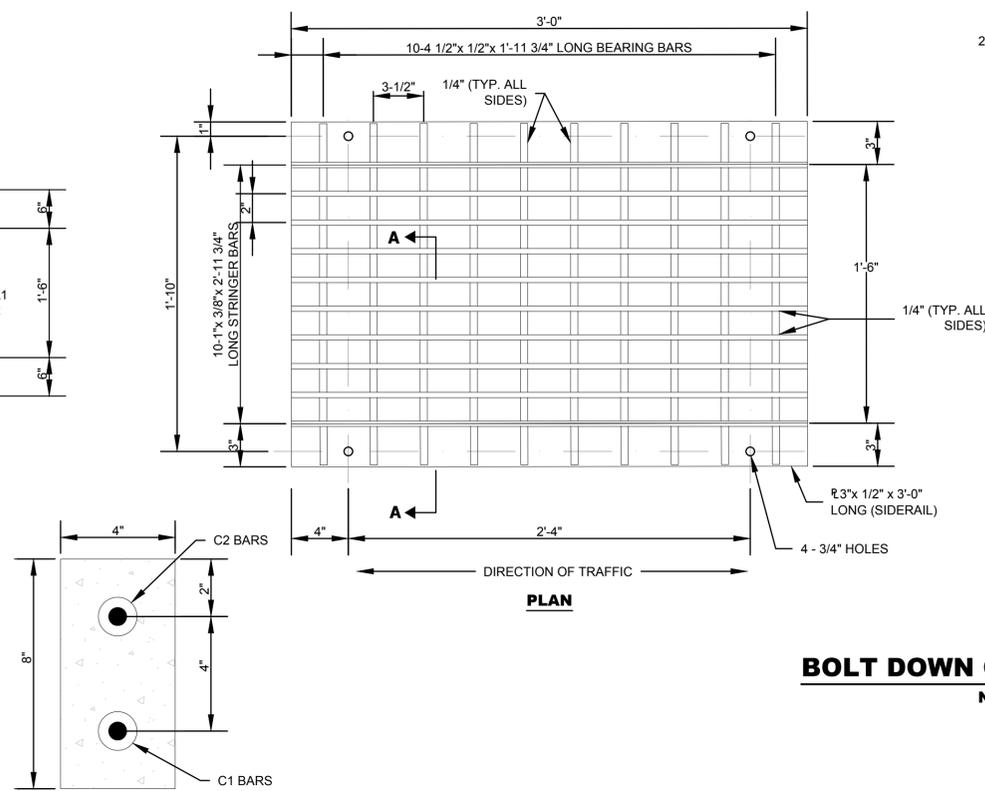
**PLAN**

BOLT DOWN GRATE NOT SHOWN FOR CLARITY

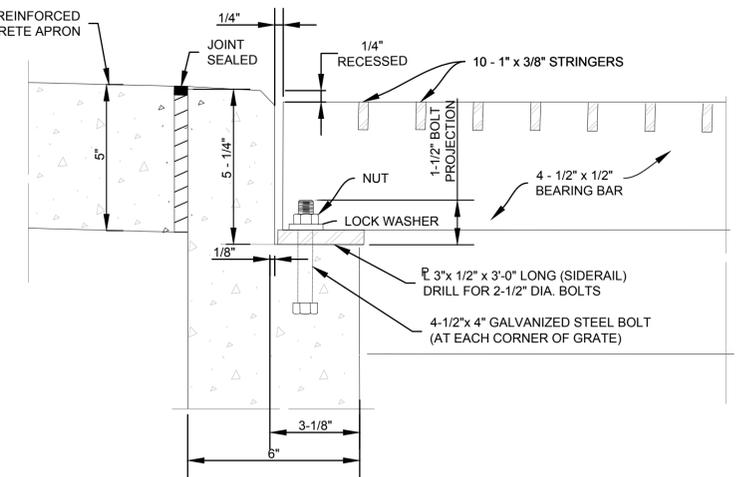


**ELEVATION**

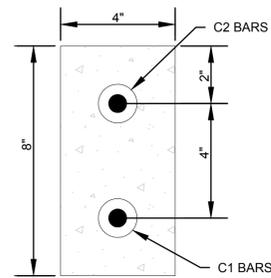
BOLT DOWN GRATE NOT SHOWN FOR CLARITY



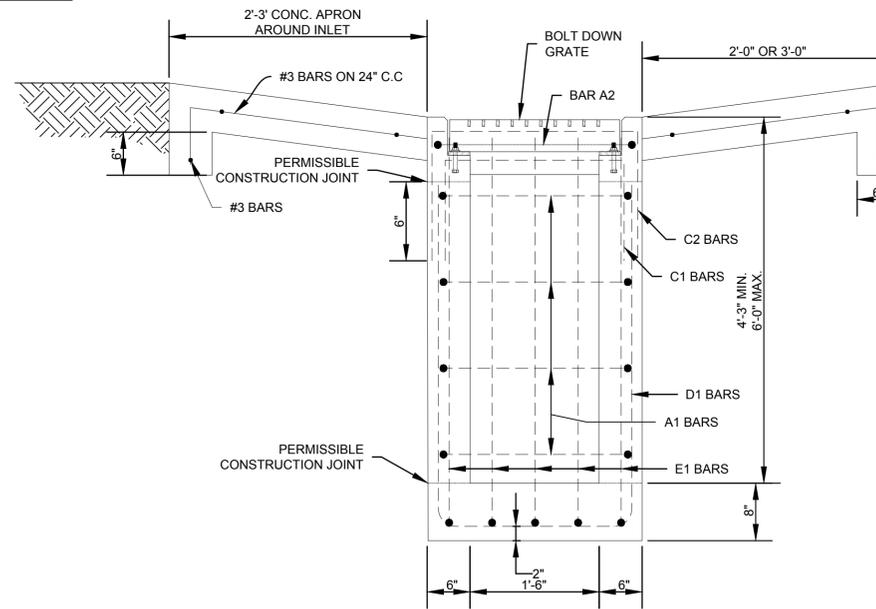
**BOLT DOWN GRATE DETAIL**  
N.T.S.



**SECTION A - A**



**SECTION B - B**



**SECTION A - A**

**BAR SCHEDULE (4'-3" DEPTH)**

BAR	NO	SIZE	TYPE	SPACING
A1	4	# 4	BENT	1'-0" C-C
A2	1	# 4	BENT	AS SHOWN
D1	6	# 5	BENT	8" C-C
E1	5	# 4	BENT	6" C-C

BAR	NO	SIZE	TYPE	SPACING
A1	4	# 4	BENT	1'-0" C-C
A2	1	# 4	BENT	AS SHOWN
C1	1	# 5	BENT	4" C-C
C2	1	# 5	BENT	4" C-C
D1	11	# 5	BENT	8" C-C
E1	5	# 4	BENT	6" C-C

BAR	NO	SIZE	TYPE	SPACING
A1	4	# 4	BENT	1'-0" C-C
A2	1	# 4	BENT	AS SHOWN
C1	2	# 5	BENT	4" C-C
C2	2	# 5	BENT	4" C-C
D1	16	# 5	BENT	8" C-C
E1	5	# 4	BENT	6" C-C

**GENERAL NOTES:**

1. PERMITTED CONST JOINT LOCATIONS SHOWN. BAR DETAILS SHALL BE ADJUSTED AS NECESSARY FOR LAP SPLICES IF HORIZONTAL CONST JOINT IS USED.
2. REINFORCING SHALL BE CUT OR BENT AT PIPE OPENINGS.
3. REINFORCING SHALL MAINTAIN 2" COVER AT ALL LOCATIONS, UNLESS OTHERWISE NOTED.
4. ALL CONCRETE SHALL EXCEED 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
5. REINFORCING BARS SHALL BE GRADE 60 AND CONFORM TO ASTM A615.
6. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO THE CENTER OF THE BARS.
7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
8. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.
9. ALL STRUCTURAL STEEL COMPONENTS EXCEPT REINFORCING STEEL SHALL BE GALVANIZED AFTER FABRICATION.
10. USE 3'-0" APRON WIDTH UNLESS PLANS NOTE OTHERWISE.
11. NO GRATE INLETS ARE ALLOWED IN STREETS, FIRELANES, DRIVES, OR PARKING SPACES UNLESS APPROVED BY THE TOWN ENGINEER.

**TYPE "G" INLET DETAIL**  
N.T.S.

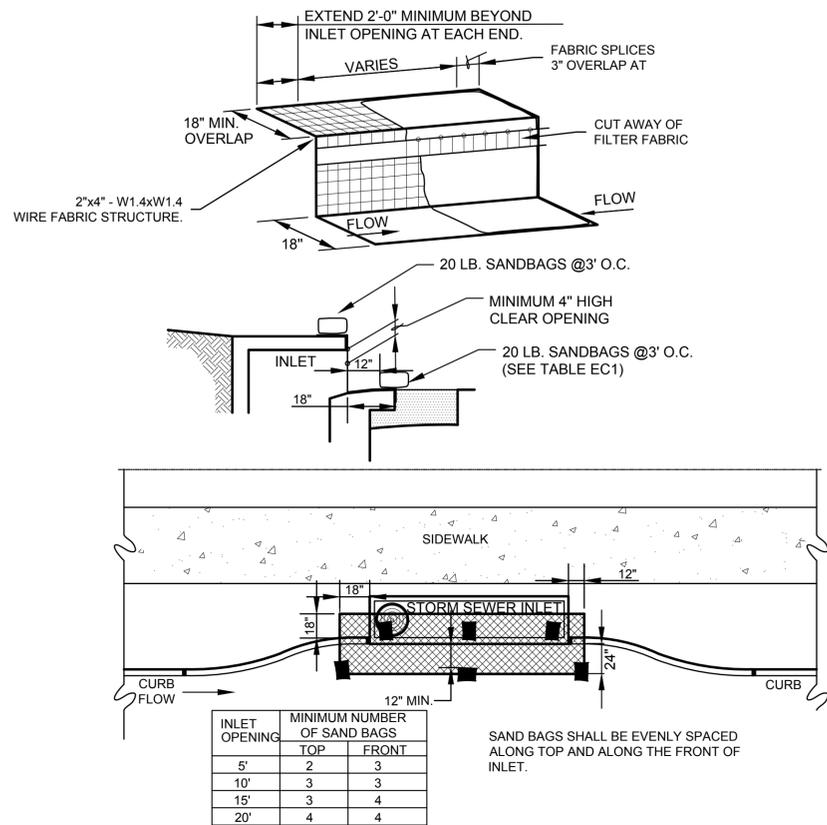
**GALV STRUCTURAL STEEL FOR**  
**3' x 2' BOLT DOWN GRATE**

BAR	NO	SPACING	LENGTH	WEIGHT
3" x 1/2" SIDERAIL	2	AS SHOWN	3'-0"	31
4-1/2" x 1/2" BEARING BAR	10	AS SHOWN	1'-11 3/4"	152
1" x 3/8" STRINGER BAR	10	AS SHOWN	2'-11 3/4"	38
TOTAL STRUCTURAL STEEL (LBS)				221

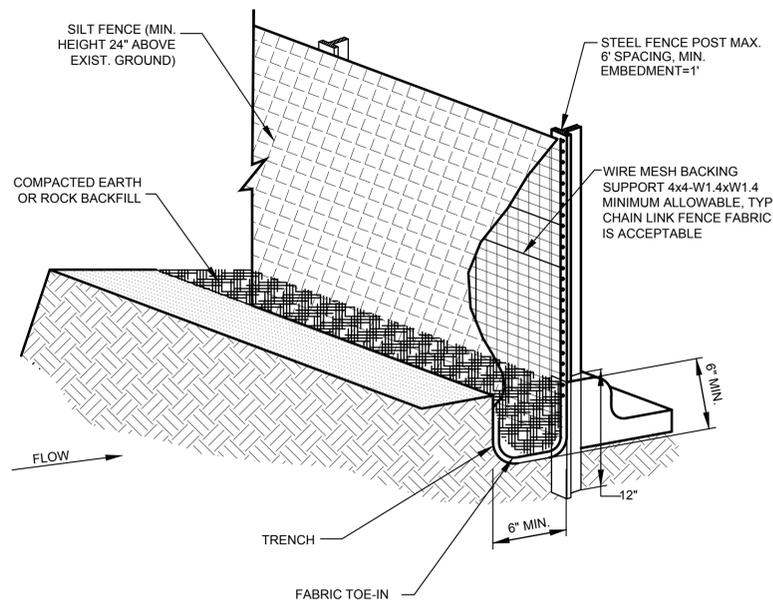
**CITY OF CELINA**  
**STORM DRAIN DETAILS 5**  
**STANDARD DETAILS**



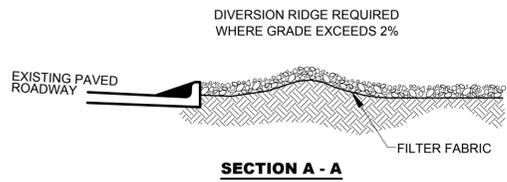
CHECKED BY: C.O. REV. BY: DATE: SYMBOL: DATE: JULY 2018  
CHECKED BY: G.J. SCALE: NOT TO SCALE SHEET NO.: SD5



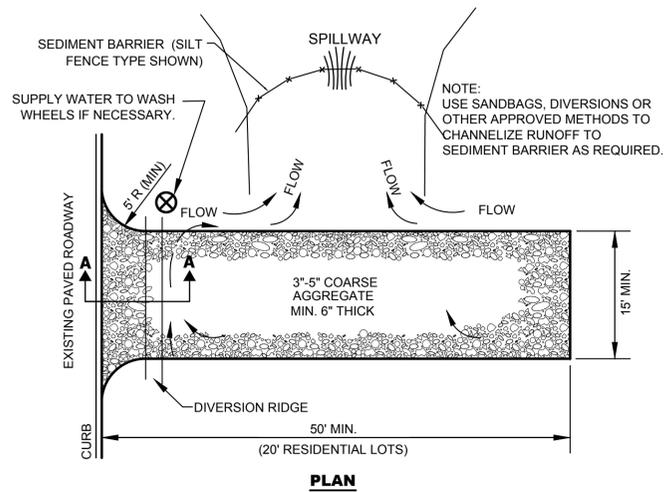
**CURB INLET ON GRADE PROTECTION DETAIL**  
 N.T.S.



**SILT FENCE ISOMETRIC PLAN VIEW**  
 N.T.S.

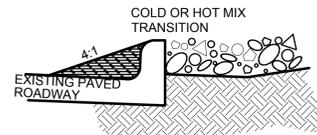


**SECTION A - A**



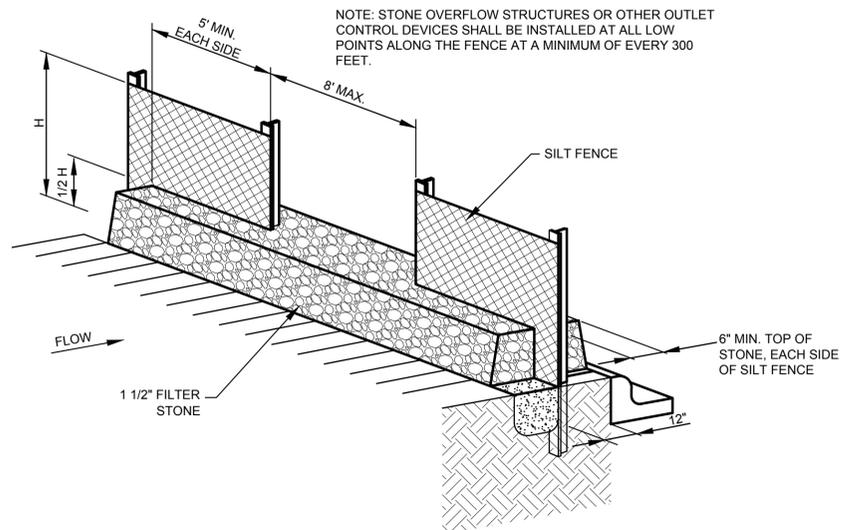
**PLAN**

WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA BETWEEN THE ROCKS, THE AGGREGATE MAT MUST BE WASHED DOWN OR REPLACED. PERIODIC RE-GRADING AND TOP DRESSING WITH ADDITIONAL STONE MUST BE DONE TO KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING.

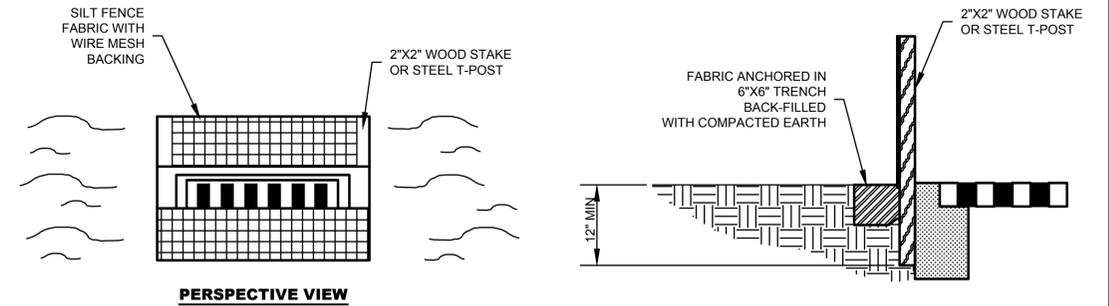


**TRANSITION**

**TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIST**  
 N.T.S.

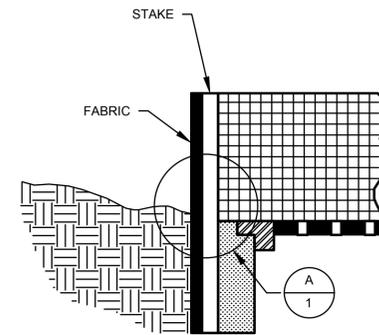


**SILT FENCE STONE OVERFLOW STRUCTURE**  
 N.T.S.

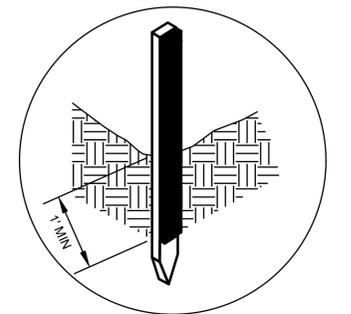


**PERSPECTIVE VIEW**

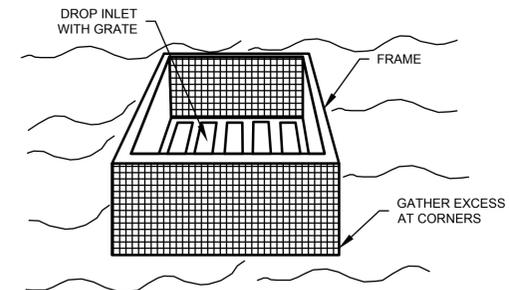
**I. STANDARD FILTER BARRIER INSTALLATION**  
 N.T.S.



**ELEVATION OF STAKE AND FABRIC ORIENTATION**



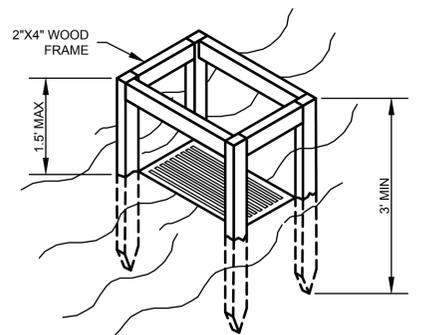
**DETAIL A**



**PERSPECTIVE VIEW**

**SPECIFIC APPLICATION**  
 THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVER-LAND FLOWS (NOT TO EXCEED 1 C.F.S.) ARE TYPICAL. THIS METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS SUCH AS IN STREETS OR HIGHWAY MEDIANS

**II. ALTERNATE FILTER BARRIER INSTALLATION**  
 N.T.S.

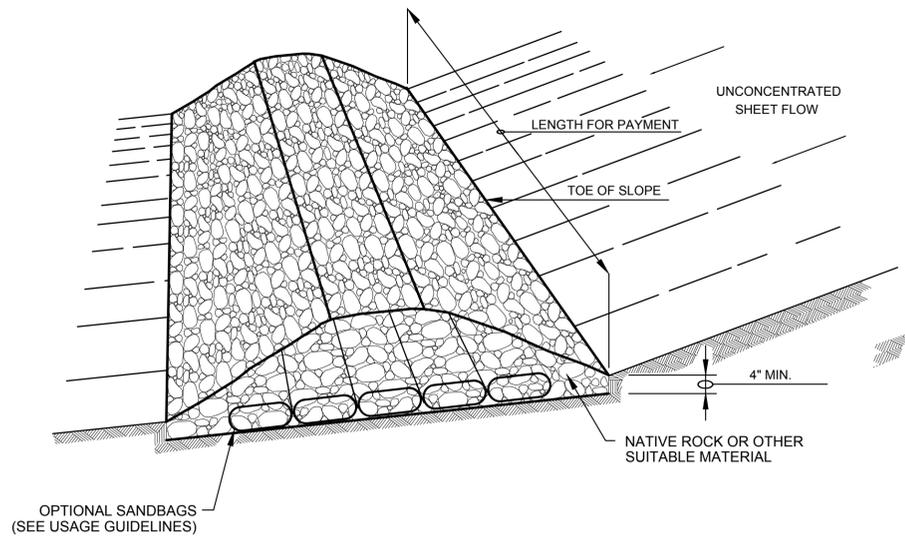


**PERSPECTIVE VIEW**

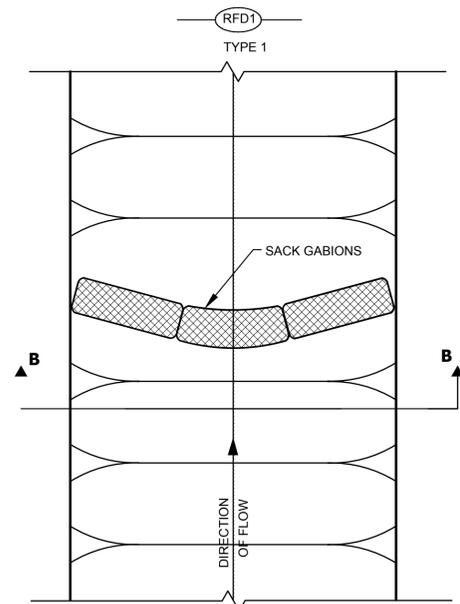
**CITY OF CELINA**  
**EROSION CONTROL DETAILS 1**  
**STANDARD DETAILS**



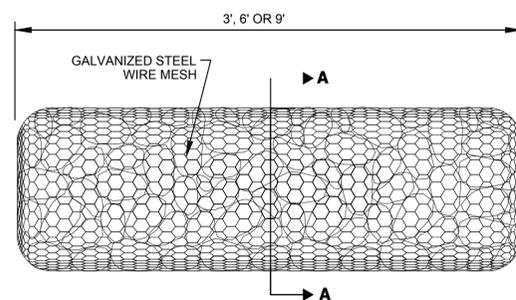
CHECKED BY: C.O. REV. BY: DATE: JULY 2018  
 CHECKED BY: G.J. SCALE: NOT TO SCALE SHEET NO.: EC1



**FILTER DAM AT TOE OF SLOPE**  
N.T.S.

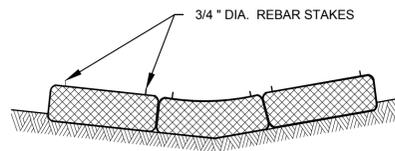


**PLAN VIEW**

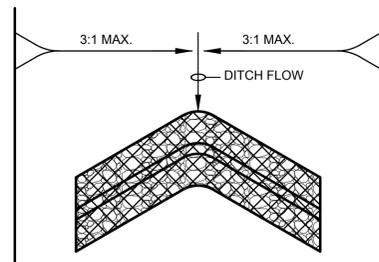


**TYPE 4 (SACK GABIONS)**

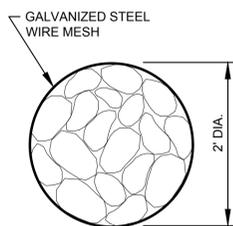
**SACK GABIONS**  
N.T.S.



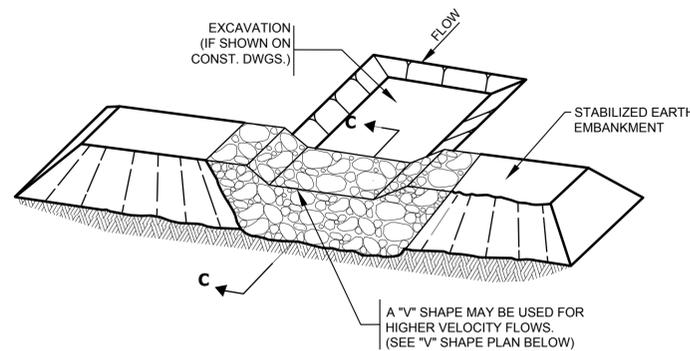
**SECTION B-B**



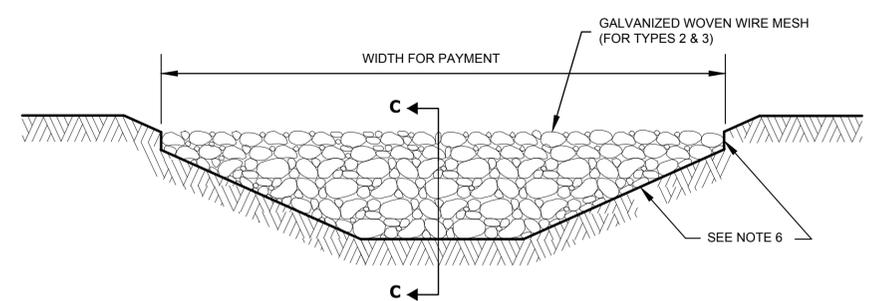
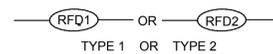
**"V" SHAPE**  
(PLAN VIEW)



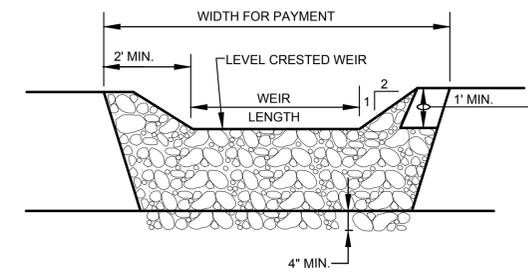
**SECTION A-A**



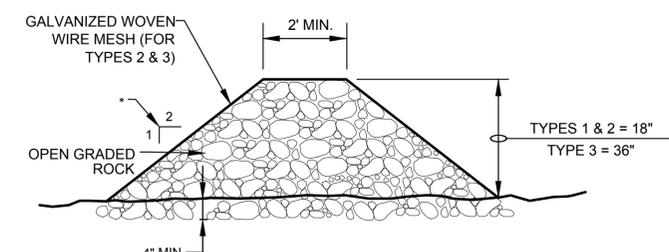
**FILTER DAM AT SEDIMENT TRAP**  
N.T.S.



**FILTER DAM AT CHANNEL SECTIONS**  
N.T.S.



**PROFILE**



\* STONE SIDE SLOPES SHOULD BE 2:1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES OF 6:1 OR FLATTER.

**SECTION C-C**  
**ROCK FILTER DAM**  
N.T.S.

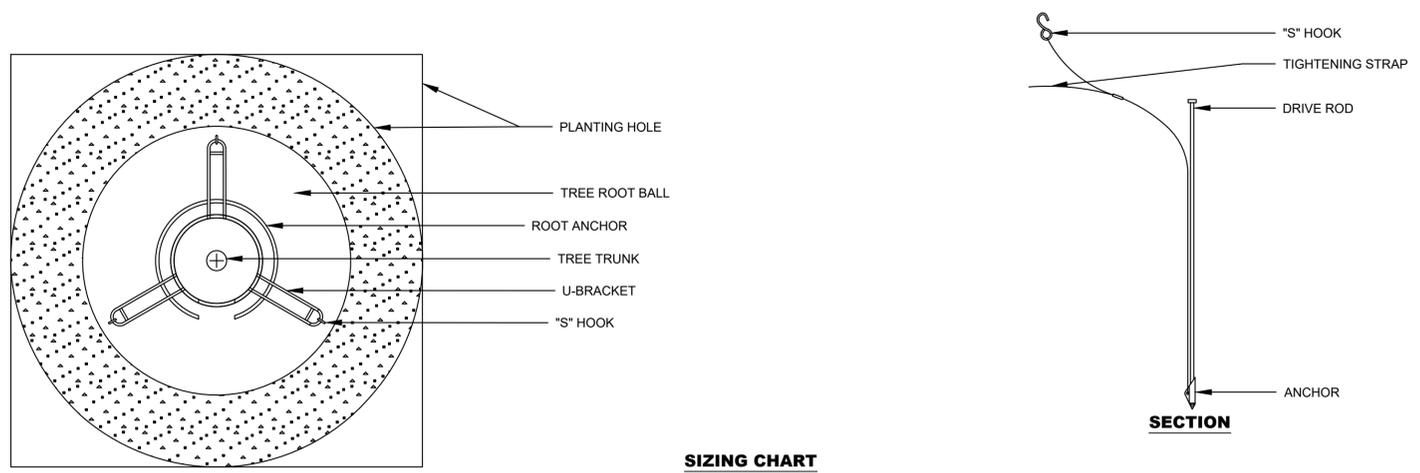
**PLANS SHEET LEGEND**

- TYPE 1 ROCK FILTER DAM — RFD1
- TYPE 2 ROCK FILTER DAM — RFD2
- TYPE 3 ROCK FILTER DAM — RFD3

**CITY OF CELINA**  
**EROSION CONTROL DETAILS 2**  
**STANDARD DETAILS**

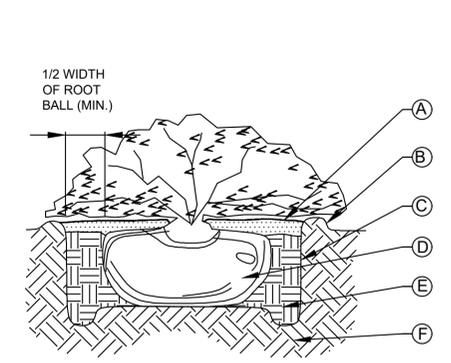


CHECKED BY: C.O.	REV. BY	DATE	SYMBOL	DATE: JULY 2018
CHECKED BY: G.J.			SCALE: NOT TO SCALE	SHEET NO.: EC2

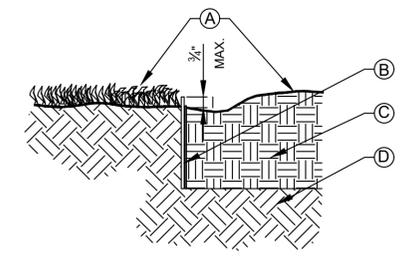


**SIZING CHART**

ROOT ANCHOR ITEM #	ROOT BALL & CONTAINER SIZE	QUANTITY & ANCHOR SIZE
15-BG	10 / 15 GALLON OR 17" ROOT BALL	3 - V68 ANCHORS
30-BG	20 / 39 GALLON OR 22" ROOT BALL	3 - V68 ANCHORS
45/65-BG	45 / 65 GALLON OR 27-30" ROOT BALL	3 - V68 ANCHORS
100-BG	95 / 100 GALLON OR 36" ROOT BALL	3 - V68 ANCHORS
150-BG	150 GALLON OR 42" ROOT BALL	3 - V68 ANCHORS
200-BG	200 GALLON OR 48" ROOT BALL	3 - V88 ANCHORS
300-BG	300 GALLON OR 58" ROOT BALL	3 - V88 ANCHORS
CUSTOM-BG	ROOT BALLS LARGER THAN 60"	



- LEGEND**
- (A) 1" COMPOST & 3" CYPRESS (RE: TECH. SPEC. 329301)
  - (B) 4" EARTH SAUCER (12" WIDE)
  - (C) PLANTING PIT SHALL BE EXCAVATED TWO TIMES WIDTH OF ROOT BALL. PIT DEPTH SHALL BE AS NEEDED TO SET ROOT BALL COLLAR AT PROPOSED FINISHED GRADE. PLACE ROOT BALL ON SOLID SOIL AND NOT LOOSE BACKFILL. SCARIFY SIDES OF PIT, PROVIDE CONTINUOUS PIT FOR MASS BED PLANTINGS.
  - (D) ROOT BALL: REMOVE BURLAP, BURLAP TIES, AND WIRE BASKET FROM TOP 2/3 OF ROOT BALL. REMOVE ALL NYLON STRINGS, PLASTIC LINERS, AND OTHER SYNTHETIC MATERIALS FROM THE ENTIRE ROOT BALL.
  - (E) PIT BACKFILL SOIL (RE: TECH. SPEC. 329301)
  - (F) UNDISTURBED EARTH

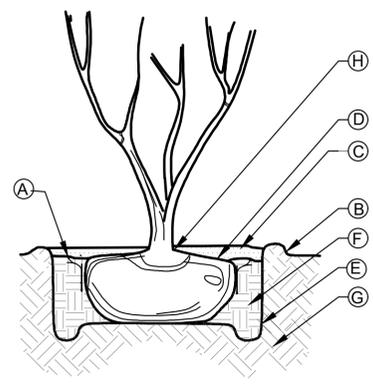


- LEGEND**
- (A) DIFFERENT PLANTING TREATMENT
  - (B) STEEL EDGING WHERE BEDS MEET LAWN PER CITY APPROVED-MANUFACTURER'S INSTRUCTIONS
  - (C) PIT BACKFILL SOIL ( RE: TECH. SPEC. 329301)
  - (D) UNDISTURBED EARTH

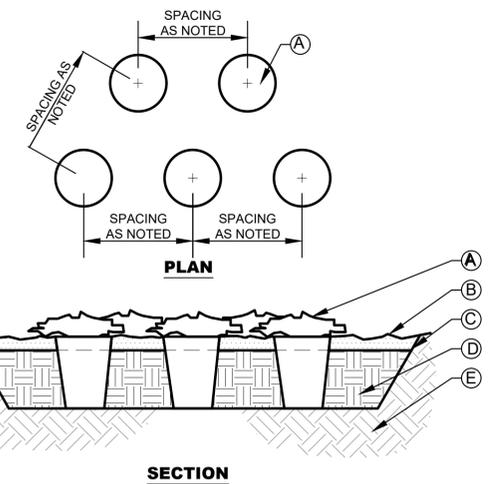
**STEEL EDGING**  
N.T.S.

**BELOW GROUND SAFETY STAKE**  
N.T.S.

- LEGEND**
- (A) BELOW GROUND SAFETY STAKE
  - (B) 4" EARTH SAUCER (12" WIDE)
  - (C) 1" COMPOST & 3" CYPRESS MULCH, KEEP 3-4" BACK FROM ROOT (RE: TECH. SPEC. 329301)
  - (D) ROOT BALL: REMOVE BURLAP, BURLAP TIES, AND WIRE BASKET FROM TOP 2/3 OF ROOT BALL. REMOVE ALL NYLON STRINGS, PLASTIC LINERS, AND OTHER SYNTHETIC MATERIALS FROM THE ENTIRE ROOT BALL.
  - (E) PLANTING PIT SHALL BE EXCAVATED TWO TIMES WIDTH OF ROOT BALL. PIT DEPTH SHALL BE AS NEEDED TO SET ROOT BALL COLLAR AT PROPOSED FINISHED GRADE. PLACE ROOT BALL ON SOLID SOIL AND NOT LOOSE BACKFILL.
  - (F) PIT BACKFILL SOIL (RE: TECH. SPEC. 329301)
  - (G) UNDISTURBED EARTH
  - (H) EXPOSE ROOT



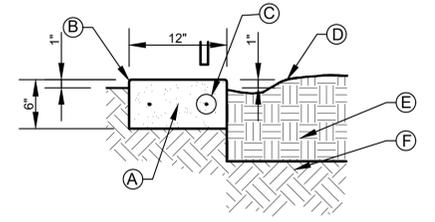
**TREE PLANTING**  
N.T.S.



- LEGEND**
- (A) GROUND COVER PER PLAN ( RE: TECHNICAL SPECIFICATION 329300)
  - (B) 1" COMPOST AND 3" CYPRESS MULCH ( RE: TECH. SPEC. 329301)
  - (C) STEEL EDGING WHERE BEDS MEET LAWNS ( RE" STEEL EDGING DETAIL SHEET)
  - (D) PIT BACKFILL SOIL ( RE: TECH. SPEC. 329301)
  - (E) UNDISTURBED EARTH

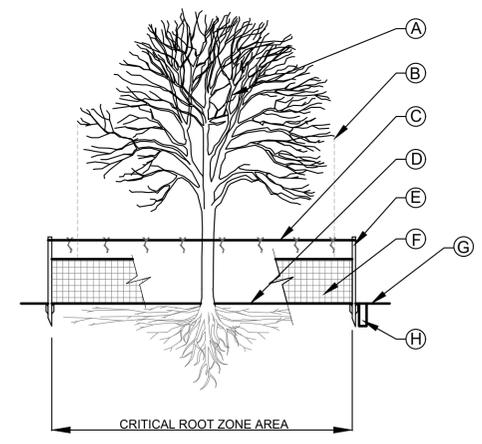
**GROUNDCOVER PLANTING**  
N.T.S.

**SHRUB PLANTING**  
N.T.S.



- LEGEND**
- (A) CLASS A CONCRETE ( RE: TECH. SPEC. 321313) WITH SAWCUTS 1/8" TO 3/16" WIDE AND ONE-THIRD THE DEPTH OF THE ACTUAL THICKNESS AT 6" OC ( MAXIMUM)
  - (B) 1/2" TOOLED RADIUS EDGE (TYP.)
  - (C) 2- #4 BAR CONTINUOUS
  - (D) PLANTING BED OR SOD
  - (E) PIT BACKFILL SOIL ( RE: TECH. SPEC. 329301)
  - (F) UNDISTURBED EARTH

**CONCRETE MOW STRIP**  
N.T.S.



- LEGEND**
- (A) EXISTING TREE (S) TO REMAIN
  - (B) DRIP LINE OF EXISTING TREE (TYP.)
  - (C) CONTINUOUS NYLON TIE STRING TIED TO STAKE TOPS W/ 2" TUNDRA WEIGHT ORANGE STREAMERS AT 3' O.C.
  - (D) EXISTING GRADE TO REMAIN
  - (E) 2" X 2" X 8' STEEL POST T-STAKES, 8' O.C. MIN., DRIVEN 2' INTO GROUND AT (OR OUTSIDE) TREE DRIP LINE
  - (F) 4' MIN. HEIGHT ORANGE PLASTIC FENCING INSTALLED PER CITY-APPROVED MANUFACTURER'S SPECIFICATIONS
  - (G) EXISTING GRADE TO BE DISTURBED
  - (H) ROOT PRUNING TRENCH 12" OUTSIDE FENCE

- NOTES FOR TREE PROTECTION**
- PERFORM ROOT PRUNING ON ALL EXISTING TREES TO REMAIN WHERE CONSTRUCTION ACTIVITY FALLS WITHIN DRIP LINE OR EXISTING TREES.
  - NO GRADING, PARKING, STORAGE OR ANY OTHER CONSTRUCTION ACTIVITY WITHIN FENCED AREA. REFER TO TECHNICAL SPECIFICATION 329600.
  - TREE PRUNING BY CERTIFIED TREE TRIMMER OR ARBORIST.

**TREE PROTECTION**  
N.T.S.

<b>CITY OF CELINA</b>			
<b>TREE PLANTING DETAILS</b>			
<b>STANDARD DETAILS</b>			
			
CHECKED BY: C.O	REV. BY	DATE	SYMBOL
CHECKED BY: K.B			
		DATE: SEPTEMBER 2019	
		SCALE: NOT TO SCALE	SHEET NO.: TP1

