CONTROL MEASURE GROUP	CONTROL MEASURE	APPL.	KEY	CONTROL MEASURE CHARACTERISTICS	TEMP.	PERMNT
VEGETATIVE SOIL COVER	TEMPORARY SEEDING		TS	PROVIDES QUICK TEMPORARY COVER TO CONTROL EROSION WHEN PERMANENT SEEDING IS NOT DESIRED OR TIME OF YEAR IS INAPPROPRIATE.		
	PERMANENT SEEDING	X	PS	PROVIDES PERMANENT VEGETATIVE COVER TO CONTROL EROSION, FILTERS SEDIMENT FROM WATER. MAY BE PART OF FINAL LANDSCAPE PLAN.		X
	DORMANT SEEDING		DS	SAME AS PERMANENT SEEDING EXCEPT IS DONE DURING DORMANT SEASON. HIGHER RATES OF SEED APPLICATION ARE REQUIRED.		
	SODDING		SO	QUICK PERMANENT COVER TO CONTROL EROSION. QUICK WAY TO ESTABLISH VEGETATION FILTER STRIP. CAN BE USED ON STEEP SLOPES OR IN DRAINAGEWAYS WHERE SEEDING MAY BE DIFFICULT.		
	GROUND COVER		GC	PROVIDES GROUND COVER, SHRUBS AND TREES IN ADDITION TO PERMANENT VEGETATION. MAY BE USED AS PART OF A FINAL LANDSCAPE PLAN ALONG WITH SHRUBS AND TREES.		
NON VEGETATIVE SOIL COVER	MULCHING		M	ADDED INSURANCE OF A SUCCESSFUL TEMPORARY OR PERMANENT SEEDING. CONTROLS UNWANTED VEGETATION AND PRESERVES MOISTURE. PROVIDES COVER WHERE VEGETATION CANNOT BE ESTABLISHED.		
	AGGREGATE COVER		AG	PROVIDES SOIL COVER ON ROADS AND PARKING LOTS AND AREAS WHERE VEGETATION CANNOT BE ESTABLISHED. PREVENTS MUD FROM BEING PICKED UP AND TRANSPORTED OFF-SITE.		X
	PAVING	X	P	PROVIDES PERMANENT COVER ON PARKING LOTS AND ROADS OR OTHER AREAS WHERE VEGETATION CANNOT BE ESTABLISHED.		X
	EROSION BLANKET		EB	PROVIDES QUICK TEMPORARY COVER TO CONTROL EROSION WHEN PERMANENT SEEDING TIME OF YEAR IS INAPPROPRIATE AND IN SLOPED AREAS.		
DIVERSIONS	RIDGE DIVERSION		RD	TYPICALLY USED ABOVE SLOPES. USED WHERE AN EXCESS OF SOIL IS AVAILABLE.		
	CHANNEL DIVERSION		CD	TYPICALLY USED AT TOP OR BASE OF SLOPES. USED WHEN EXCESS SOIL IS NOT AVAILABLE.		
	COMBINATION DIVERSION		DC	TYPICALLY USED ANYWHERE ONA SLOPE. SOIL TAKEN OUT OF CHANNEL IS USED TO BUILD THE RIDGE.		
	CURB AND GUTTER	X	CG	SPECIAL CASE OF DIVERSION USED IN CONJUNCTION WITH A STREET TO DIVERT WATER FROM AN AREA NEEDING PROTECTION.		X
	BENCHES		B	SPECIAL CASE OF DIVERSION CONSTRUCTED WHEN WORKING ON CUT SLOPES TO SHORTEN LENGTH OF SLOPE AND ADD SLOPE STABILITY.		
WATERWAYS	BARE CHANNEL		BC	PROVIDES MEANS OF CONVEYING RUNOFF TO DESIRED LOCATION. MAY BE USED TO DRAIN DEPRESSIONAL AREAS. ONLY APPLICABLE WHEN VELOCITY OF FLOW IS VERY LOW.		
	VEGETATIVE CHANNEL		VC	PROVIDED ADDED STABILITY TO CHANNEL. USED WHEN VELOCITY OF FLOW IS NOT EXTREMELY FAST.		
	LINED CHANNEL		LC	USED WHEN VEGETATION WILL NOT PROTECT THE CHANNEL AGAINST HIGH VELOCITIES OF FLOW OR WHERE VEGETATION CANNOT BE ESTABLISHED.		
	ROCK CHECKS		RC	PROVIDES AN ENERGY DISSIPATOR ALONG A LENGTHY CHANNEL TO REDUCE VELOCITY OF STORMWATER		
ENCLOSED DRAINAGE	STORM SEWER	X	ST	CAN BE USED TO CONVEY SEDIMENT LADEN WATER TO SEDIMENT BASIN OR IN CONJUNCTION WITH A WATERWAY.		X
	UNDERDRAIN		UD	USED TO LOWER WATER TABLE AND INTERCEPT GROUNDWATER FOR BETTER VEGETATION GROWTH AND SLOPE STABILITY. USED TO CARRY BASE FLOW IN WATERWAYS AND TO DEWATER SEDIMENT BASINS.		
SPILLWAYS	STRAIGHT PIPE SPILLWAY		SS	USED FOR RELATIVELY SMALL VERTICAL DROPS AND SMALL FLOWS OF WATER		
	DROP INLET PIPE SPILLWAY		DIS	SAME AS PIPE SPILLWAY EXCEPT LARGER FLOWS AND LARGE VERTICAL DROPS CAN BE ACCOMMODATED.		
	WEIR SPILLWAY		W	USED FOR RELATIVELY SMALL VERTICAL DROPS AND FLOWS MUCH GREATER THAN PIPE STRUCTURES.		
	BOX INLET WEIR SPILLWAY		BS	SAME AS WEIR SPILLWAY EXCEPT LARGER FLOWS CAN BE ACCOMMODATED BECAUSE OF LOWER WEIR LENGTH.		
OUTLETS	LINED APRON		LA	PROTECTS DOWNSTREAM CHANNEL FROM HIGH VELOCITY OF FLOW DISCHARGING FROM STRUCTURES.		
	STONE RIP RAP	X	RR	USED AS AN ENERGY DISSIPATOR AT OUTLET STRUCTURES TO REDUCE VELOCITIES		
SEDIMENT BASINS	EMBANKMENT SEDIMENT BASIN		ES	USED WHERE TOPOGRAPHY LENDS ITSELF TO CONSTRUCTING A DAM AND EARTH FILL IS AVAILABLE.		
	EXCAVATED SEDIMENT BASIN		XS	USED WHERE EMBANKMENT COULD CAUSE A HAZARD DOWNSTREAM IN CASE OF FAILURE AND WHEN EXCESS EARTH FILL IS NOT AVAILABLE.		
	COMBINATION SEDIMENT BASIN		CS	USED WHEN TOPOGRAPHY IS SUITABLE BUT ADDITIONAL CAPACITY IS NEEDED.		
SEDIMENT FILTERS	BARRIER FILTER	X	BF	USED FOR SINGLE LOTS OR DRAINAGE AREAS LESS THAN 1/2 ACRE TO FILTER SEDIMENT FROM RUNOFF.	X	
	VEGETATIVE FILTER		VF	USED ALONG DRAINAGE WAYS OR PROPERTY LINES TO FILTER SEDIMENT FROM RUNOFF. SIZE MUST BE INCREASED IN PROPORTION TO DRAINAGE AREA.		
	FILTER BASKET	X	FB	USED FOR FILTERING SEDIMENT WITHIN THE ROADWAY BEFORE ENTERING THE STORM SEWER	X	
	INLET PROTECTION		IP	USED FOR FILTERING SEDIMENT WITHIN GRASS AREAS BEFORE WATER ENTERS THE STORM SEWER		
MUD AND DUST CONTROL	STABILIZED CONST. ENTRANCE	X	SE	PREVENT MUD FROM BEING PICKED UP AND CARRIED OFF-SITE.	X	
	DUST AND TRAFFIC CONTROL	X	DT	PREVENTS DUST FROM LEAVING CONSTRUCTION SITE.	X	

STABILIZATION TYPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING			A			*	*					

A SALT TOLERANT HYDROSEED TURF SEED – CLESEN PREMIUM MIX

* IRRIGATION NEEDED DURING JUNE AND JULY

** IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.

EROSION CONTROL NOTES

- All sedimentation and erosion control regulations shall be adhered to per City of Crystal Lake requirements
- All erosion control measures shall be installed prior to the start of construction.
- No land disturbing activities shall not commence until approval to do so has been received by governing authorities, in addition to, no land clearing or grading shall begin until all perimeter erosion and sediment control measures have been installed. (including storm water pollution prevention plan per the development criteria.)
- If any additional soil erosion measures are deemed necessary by the City Engineer or his representative. These measures must be immediately implemented by the contractor.
- The general contractor shall strictly adhere to the storm water pollution prevention plan (swppp) during construction operations.
- All topsoil shall be stripped prior to filling
- All exposed areas shall be seeded as specified within 14 days of final grading.
- Should construction stop for longer than 14 days, the site shall be seeded as specified.
- Sediment and erosion control measures shall be inspected at least once every seven (7) days and within 24 hours of a rainfall exceeding 0.5 inches during a 24–hour period or more frequently if required by governing NPDES general permit. All maintenance required by inspection shall commence within 24 hours and be completed within 48 hours of report.
- This plan shall not be considered all inclusive as the general contractor shall take all necessary precautions to prevent soil sediment from leaving the site.
- General contractor shall comply with all state and local ordinances that apply.
- Additional erosion and sediment control measures will be installed if deemed necessary by on site inspection.
- If installation of storm drainage system should be interrupted by weather or nightfall, the pipe ends shall be covered with filter fabric.
- General contractor shall be responsible to take whatever means necessary to establish permanent soil stabilization.
- All erosion and sediment control practices shall be maintained and repaired as needed to ensure effective performance of the required erosion control measures.
- All erosion and sediment control work shall conform to the I.D.O.T. Manual for, standards and procedures for erosion control.
- All construction will adhere to the requirements set forth in the IEPA's new construction site activities national pollutant discharge elimination system (NPDES) storm water permit.
- All roadways and driveways shall be cleaned at the end of each construction day.
- All disturbed areas shall be stabilized within 7 days of active disturbance.
- All erosion control measures shall be disposed of within 30 days of final stabilization of the site.
- Ground cover for 5:1 slopes or greater shall be established as soon as possible.
- All disturbed areas to to restored w/ 4" topsoil respread & hydroseeded unless otherwise noted on plans
- Filter Baskets or Silt filter fabric shall be placed between frame and grate until vegetation is established. (see detail)
- Utilize hydroseeded on all slopes of 5:1 or greater.
  *Mulch/hydroseed per I.D.O.T. Manual, section 251, standard specifications for road and bridge construction, (latest edition
  *Mulch/hydroseed method 2, procedure 3
- No dimensions shall be assumed by scaling.
- No known drain tiles are present on the proposed development, if tiles are encountered during construction please notify the engineer immediately.
- No part of the proposed project is located within a flood hazard 10–100yr area a flood hazard area
- Excess material shall be placed at specified location unless otherwise specified by owner and approved by engineer for use of lot grading. Stockpiles shall be surrounded with filter fence and shall be seeded per I.D.O.T. Manual (latest addition) (temporary) if left more than 14 working days.
- General contractor shall notify all utility companies having underground utilities on site or in right–of–way prior to excavation. Contractor shall contact utility locating company and locate all utilities prior to grading start.

PHASING NOTES:

SEQUENCE OF MAJOR ACTIVITIES

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows (refer to the Erosion and Sediment Control Plan Sheet contained in this SWPPP for details and refer to the Suggested Phasing Plan in the design drawings for construction sequencing):

A. A pre–construction meeting shall be held by the Site Project Manager and the Operator's Engineer prior to land disturbing activities.
B. Install perimeter silt fences and inlet protection in the locations shown on the Erosion Control plan sheets.
C. Implement erosion control measures around the existing storm sewer to prevent sedimentation from infiltrating into the storm sewer system as shown on the Erosion Control plan sheets.
D. Construct temporary construction exits at locations shown on the Erosion Control plan sheets.
E. Begin clearing and grubbing operations if applicable. Clearing and grubbing shall be done only in areas where earthwork will be performed and only in areas where building is planned to commence within 7 days after clearing and grubbing.
F. Disturbed areas of the site where Construction Activity has ceased for more than 7 days shall be temporarily seeded and watered.
G. Commence site grading.
H. Construct gutter inlets, area inlets, storm sewer manholes and proposed storm sewer.
I. Install inlet / outlet protection around the constructed storm sewer to prevent sedimentation from infiltrating into the storm sewer system as shown on the Erosion Control plan sheets.
J. Construct utilities
K. Finalize pavement subgrade preparation.
L. Construct all curb and gutter. Inlet protection may be removed temporarily for this construction.
M. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.
N. Install base material as required for pavement.
O. Carry out final grading and seeding, sodding and planting, including rolled erosion control products where shown on the Erosion Control plan sheets.
P. Remove silt fencing only after all paving is complete and exposed surfaces are stabilized.
Q. Remove temporary construction exits

A schedule for implementation for the activities identified above is included as Form C–3 of the SWPPP.

SPECIFICATIONS & GENERAL NOTES

NOTES:

This plan has been prepared to comply with the provisions of the NPDES Permit Number issued by the Illinois Environmental Protection Agency for Stormwater Discharges from Construction Site Activities.

1. Site Description.

   a. The following is a description of the construction activity which is the subject of this plan:
   The proposed development consists of construction of Parking lot demolition and reconfiguration, storm sewer, swales, The construction activities for site improvements will include: site clearing, grubbing, mass grading, pavement construction, installation of utilities including storm sewers, soil erosion and sedimentation control measures, as a minimum.

   b. The following is a description of the intended sequence of major activities which will disturb soils for major portions of the construction site such as grubbing, excavation, and grading:

   The sequence of the construction activities may be as follows:
   See Sequence of major activities on this sheet.

   c. The total area of the construction site is estimated to be 6.0± acres.

   The total area if the site that is estimated to be disturbed by excavation, grading, or other activities, is 6.0± acres.

2. Controls.

   This section of the plan addresses the various controls that will be implemented for each of the major construction activities described in 1.b above. For each measure discussed, the contractors will be responsible for its implementation as indicated. Each such contractor has signed the required certification on forms which are attached to, and are a part of, this plan.

   a. Erosion and Sediment Controls.

      (i) STABILIZATION PRACTICES. Provided below is a description of interim and permanent stabilization practices, including site–specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Except as provided in 2.a. (i) (A) and 2.b. stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portions of the site where construction activity will not occur for a period of 21 or more calendar days.

      (A) Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

      The following interim and permanent stabilization practices, as a minimum will be implemented to stabilize the disturbed area of the site:

      1 Temporary Seeding
      2 Permanent seeding
      3 Erosion Blanket
      4 Stone Riprap
      5 Barrier filter
      6 Inlet protection
      7 Outlet protection
      8 Vegetative filter
      9 Vegetative channel
      10 Stabilized construction entrance
      11 Dust & Traffic Control

      (ii) STRUCTURAL PRACTICES. Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. The installation of these devices may be subject to Section 404 of the Clean Water Act.

      1. Detention basins
      2. Storm sewer system
      3. Vegetated drainage swales
      4. Permanent seeding
      5. Stone Riprap
      6. Outlet protection
      7. Filter fabric
      8. Inlet protection

   b. Erosion Control. It shall be the Contractor's responsibility to provide adequate erosion control on the job site. The following erosion control sequence shall be adhered to:

      A. A pre–construction meeting shall be held by the Site Project Manager and the Operator's Engineer prior to land disturbing activities.
      B. Install perimeter silt fences and inlet protection in the locations shown on the Erosion Control plan sheets.
      C. Implement erosion control measures around the existing storm sewer to prevent sedimentation from infiltrating into the storm sewer system as shown on the Erosion Control plan sheets.
      D. Construct temporary construction exits at locations shown on the Erosion Control plan sheets.
      E. Begin clearing and grubbing operations if applicable. Clearing and grubbing shall be done only in areas where earthwork will be performed and only in areas where building is planned to commence within 7 days after clearing and grubbing.
      F. Disturbed areas of the site where Construction Activity has ceased for more than 7 days shall be temporarily seeded and watered.
      G. Commence site grading.
      H. Construct gutter inlets, area inlets, storm sewer manholes and proposed storm sewer.
      I. Install inlet / outlet protection around the constructed storm sewer to prevent sedimentation from infiltrating into the storm sewer system as shown on the Erosion Control plan sheets.
      J. Construct utilities
      K. Finalize pavement subgrade preparation.
      L. Construct all curb and gutter. Inlet protection may be removed temporarily for this construction.
      M. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.
      N. Install base material as required for pavement.
      O. Carry out final grading and seeding, sodding and planting, including rolled erosion control products where shown on the Erosion Control plan sheets.
      P. Remove silt fencing only after all paving is complete and exposed surfaces are stabilized.
      Q. Remove temporary construction exits

      Any siltation of conduits, structures, or ditches shall be cleaned and maintained by the Contractor, on a weekly basis, until the seeding has taken hold. All washouts, gullies, etc. will be regraded and reseeded by the Contractor, at the Contractor's expense.

      The Contractor's responsibility for erosion control shall extend throughout the construction process. The Contractor shall be responsible for cleanup of paved surfaces within and adjacent to the project.

      All erosion control practices shall be in compliance with the latest revision of the "Standard Specifications for Road and Bridge Construction," by the Illinois Department of Transportation and with "Standards and Specifications for Soil Erosion and Sedimentation Control" as published by the Illinois Environmental Protection Agency.

      If a topsoil stockpile location is provided and approved by the City, Contractor shall establish erosion control measures for the stockpile if it is to remain in place for more than three days. In addition, barrier filter fence shall enclose topsoil stockpile location with exception of truck access during construction hours.

   c. Stormwater Management.

      (i) Provided below is a description of measures that will be installed during the construction process to control pollutants in stormwater discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

      The practices selected for implantation were determined on the basis of the technical guidance contained in IEPA's Standard Specifications for Soil Erosion and Sedimentation Control, and other ordinances listed in the Specifications.

      The stormwater pollutant control measures shall include:

      1. Silt filter fence
      2. Drainage swales
      3. Storm sewers
      4. Rip–rap outlet protection
      5. Inlet protection
      6. Retention/Detention ponds

      (ii) Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non–erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions, such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

      Stormwater Management Control includes
      1 Stone Riprap
      2 Filter Fabric
      3 Vegetative channels.
      4 Inlet protection.

3. Other Controls.

   (i) Waste Disposal. The solid waste materials including trash, construction debris, excess construction materials, machinery, tools and other items will be collected and disposed off–site by the contractor. The contractor is responsible to acquire any permit required for such disposal. Burning on the site will not be permitted. No solid materials, including building materials, shall be discharged into Waters of the State, except as authorized by a Section 404 permit.

   (ii) The provisions of this plan shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.

The sanitary sewage will be discharged to the proposed sanitary sewer constructed per IEPA and local standards.

   a. Approved State or Local Plans.

      The management practices, controls and other provisions contained in this plan are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Standards and Specifications for Soil and Erosion and Sediment Control dated October 1987, Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Plan, and the Municipal Subdivision Ordinance. Requirements specified in sediment and erosion control site plans or site permits or stormwater management or site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI to be authorized to discharge under this permit, incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

   b. Maintenance.

      The following is a description of procedures that will be used to maintain, in good and effective operating conditions, vegetation, erosion and sediment control measures and other protective measures identified in this plan and Standard Specifications.

      Vegetative erosion control measures: The vegetative growth of temporary and permanent seeding, sodding, vegetative channels, vegetative filter, etc. shall be maintained periodically and supply adequate watering and fertilizer. The vegetative cover shall be removed and reseeded as necessary.

      Silt filter fence: The damaged silt filter fence shall be restored to meet the standards or removed and replaced as needed.

      Rip–rap outlet protection: It shall be inspected after high flows for any scour beneath the Rip–rap or for stones that have been dislodged. It shall be repaired immediately.
      Inlet Protection: Shall be inspected and emptied of silt if filled as required.

      Disturbed areas shall be stabilized with temporary or permanent measures within 7 calendar days following the end of active disturbance, or redistubance, consistent with the following criteria:

      (i) Appropriate temporary or permanent stabilization measures shall include seeding, mulching, sodding, and/or non–vegitative measures.
      (ii) Areas having slopes greater than 12 percent shall be stabilized with sod, mat, or blanket in combination with seeding or equivalent.

      Soil storage piles containing more than 10 cu. yds. of material shall not be located with a downslope drainage length less than 25 feet to a roadway or drainage channel. Filter barriers, including straw bales, filter fence, or equivalent, shall be installed immediately on the down slope of the piles.

4. Inspections.

   The Owner, or Owner's representative shall provide qualified personnel to inspect disturbed areas of the construction site which have not been finally stabilized, structural control measures and location where vehicles enter or exit the site. Such inspections shall be conducted at least once every seven (7) calendar days within 24 hours of the end of a storm that is 0.5 inches or greater or equivalent snowfall.

   a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off–site sediment tracking.

   b. Based on the results of the inspection, the description of potential pollutant sources identified in section 1 above and pollution prevention measures identified in section 2 above shall be revised as appropriate as soon as practicable after such inspection. Any changes to this plan resulting from the required inspections shall be implemented within 7 calendar days following the inspection.

   c. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of this stormwater pollution prevention plan and actions taken in accordance with section 4.b. shall be made and retained as part of the plan for at least three (3) years after the date of the inspection. The report shall be signed in accordance with Part VI.G of the general permit.

   d. If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer or Resident Technician shall complete and file an "Incidence of Noncompliance" (ION) report for the identified violation. The Resident Engineer or Resident Technician shall use forms provided by the Illinois Environmental Protection Agency and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of noncompliance shall be signed by a responsible authority in accordance with Part VI. G of the general permit. The report of noncompliance shall be mailed to the following address:

      Illinois Environmental Protection Agency
      Division of Water Pollution Control
      Attn: Compliance Assurance Section
      2200 Churchill Road
      Post Office Box 19276
      Springfield, Illinois 62794–9276

5. Non–Stormwater Discharges.
   Except for flows from fire fighting activities, sources of non–stormwater that may be combined with stormwater discharges associated with the industrial activity addressed in this plan, are described below:

   a. Water main flushing
   b. Fire hydrant flushing
   c. Watering for dust control
   d. Irrigation drainage for vegetative growth for seeding, etc..

   The pollution prevention measures, as described below, will be implemented for non–stormwater components of the discharge:

   The fire hydrant and water main shall not be flushed directly on the exposed area of sub grade of the pavement. Hoses shall be used to direct the flow into the storm sewer system, if available.

   The erosion due to irrigation of seeding shall be considered minor.

   Contractor to provide the above non–stormwater discharged control to the standard specification required by the City or the approved equal.

CONSTRUCTION SEQUENCE

1. File sotrmwater NPDES permit with the IEPA at least 30 days prior to beginning work.
2. Install all permanent and temporary erosion control practices, i.e. diversions, vegetated swales, stabilized construction entrances, temporary silt basins, polymer systems, and silt fences.
3. Construct temporary sediment basins.
4. City inspection and signoff.
5. Existing parking lot demolisiion, strip topsoil.
6. Install all underground utilities.
7. Stabilize stockpiles with vegetative cover and additional erosion control measures.
8. City inspection and signoff.
9. Mass grading and construction of curb, sidewalk, and pavement.
10. Add additional soil erosion and sediment control as needed. In particular the CLSO requirement for stabilization within 14 days of temporary or permanent cessation of grading must be met and will be vigorously enforced by the City.
11. Disk disturbed pervious areas to restore infiltration prior to topsoil placement and vegetation.
12. Permanent site stabilization.
13. City inspection.

BID ONLY

DRAWN BY: CWF JOB DATE: 2016
APPROVED: JFV JOB NUMBER: 86150398
CAD DATE: 3/9/2016 1:24:18 PM
CAD FILE: \\hrgmhnas\Data\86150398\CAD\Dwgs\C\86150398–Details.dwg

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1"
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
ILLINOIS DESIGN FIRM # 184.001322
420 N. FRONT STREET, SUITE 100
McHENRY, ILLINOIS 60050
PHONE: 815.385.1778 | TOLL FREE: 800.728.7805
FAX: 815.385.1781 | HRGreen.com

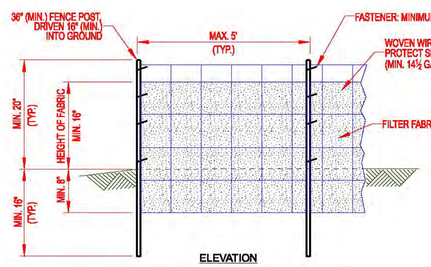
McHenry County College

McHENRY COUNTY COLLEGE
PARKING LOT A RECONSTRUCTION
CRYSTAL LAKE, ILLINOIS

CIVIL SITEWORK
EROSION CONTROL SPECIFICATIONS

SHEET NO.
C–09

EC-01



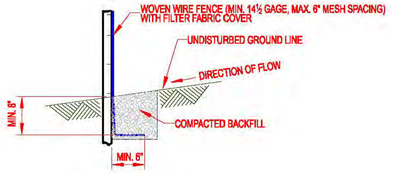
ELEVATION

MATERIAL SPECIFICATIONS:

POSTS:	STEEL (EITHER "T" OR "U" TYPE) OR HARDWOOD WITH A MINIMUM CROSS-SECTIONAL AREA OF 3.0 SQ. IN.
FENCE:	WOVEN WIRE (14 ½ GAGE) WITH 6" MAX. MESH OPENING
FILTER CLOTH:	FILTER X, MIRAFI 100X, STABILINKA T 140N.

NOTES:

1. TEMPORARY SEDIMENT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. THEY SHALL BE MAINTAINED, AS NEEDED, THROUGHOUT THE CONSTRUCTION PERIOD AND REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POST WITH TIES OR STAPLES
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID-SECTION
4. WHEN TWO (2) SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX (6) INCHES AND FOLDED
5. MATERIAL SHALL BE REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE
6. DOUBLE ROWS OF SILT FENCE SPACED FIVE (5) FEET APART SHALL BE PLACED AROUND EXISTING STORMWATER MANAGEMENT FACILITIES OR WETLANDS AS ADDITIONAL PROTECTION



FABRIC ANCHOR DETAIL

Approved: City Engineer
Victor C. Ramirez, P.E.
Director of Engineering and Building

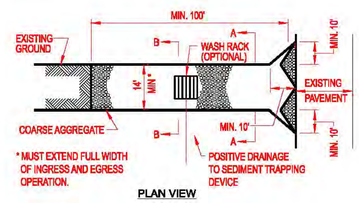
Drawing Name: SILT FENCE (BF)

Drawing Number: EC-01
Date: 11/2/2007
Drawn: EM Checked: LZ

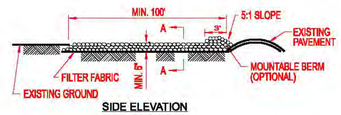
CRYSTAL LAKE ILLINOIS Engineering Division

L:\ENGINEERING AND BUILDING\ENGINEERING\DETAILS AND STANDARDS\

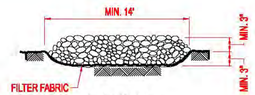
EC-02



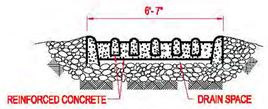
PLAN VIEW



SIDE ELEVATION



SECTION A-A



SECTION B-B

NOTES:

1. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 282 OF THE IDOT STANDARD SPECIFICATIONS AND SHALL BE PLACED OVER THE CLEARED AREA PRIOR TO THE PLACEMENT OF ROCK.
2. ROCK OR RECLAIMED CONCRETE SHALL MEET ONE OF THE FOLLOWING IDOT COARSE AGGREGATE GRADATIONS, CA-1, CA-2, CA-3 OR CA-4.
3. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHALL BE CONSTRUCTED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
4. IF WASH RACKS ARE USED, THEY SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

Approved: City Engineer
Victor C. Ramirez, P.E.
Director of Engineering and Building

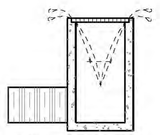
Drawing Name: CONSTRUCTION ENTRANCE

Drawing Number: EC-02
Date: 4/15/2007
Drawn: EM Checked: LZ

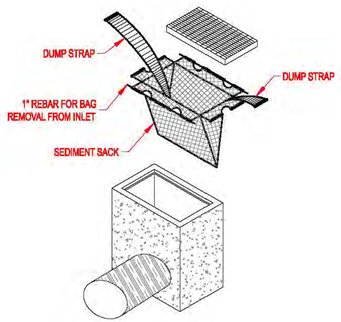
CRYSTAL LAKE ILLINOIS Engineering Division

L:\ENGINEERING AND BUILDING\ENGINEERING\DETAILS AND STANDARDS\

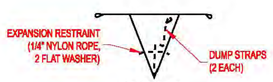
EC-04



INSTALLATION DETAIL



SEDIMENT CONTROL DEVICE



BAG DETAIL

Approved: City Engineer
Victor C. Ramirez, P.E.
Director of Engineering and Building

Drawing Name: INLET SEDIMENT CONTROL DEVICE (FB)

Drawing Number: EC-04
Date: 4/15/2007
Drawn: EM Checked: LZ

CRYSTAL LAKE ILLINOIS Engineering Division

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BID ONLY

DRAWN BY: CWF JOB DATE: 2016
APPROVED: JFV JOB NUMBER: 86150398
CAD DATE: 3/9/2016 1:24:18 PM
CAD FILE: \\hrgmhnas\Data\86150398\CAD\Dwgs\C\86150398-Details.dwg

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420 N. FRONT STREET, SUITE 100
McHENRY, ILLINOIS 60050
PHONE: 815.385.1778 | TOLL FREE: 800.728.7805
FAX: 815.385.1781 | HRGreen.com

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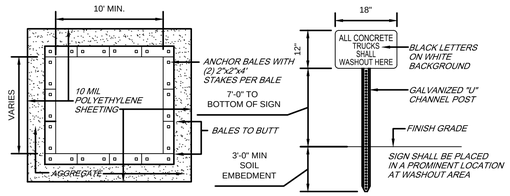
CRYSTAL LAKE, ILLINOIS

CIVIL SITEWORK
EROSION CONTROL DETAILS

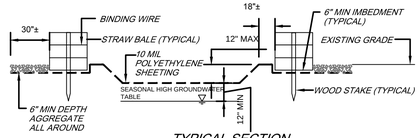
SHEET NO.
C–10

CONCRETE WASHOUT AREA



PLAN

WASHOUT SIGN



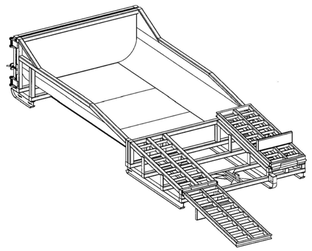
TYPICAL SECTION

NOTES:

1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

ALTERNATIVE CONCRETE WASHOUT AREA

PORTABLE CONCRETE WASHOUT CONTAINER

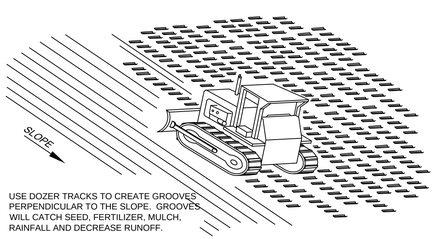


CONCRETE WASHOUT SYSTEMS

PO Box 2604
Carmichael, CA. 95609
Phone: 1.877.292.7468
Fax: 1.916.244.0403
info@concretewashout.com
www.concretewashout.com
Patent Pending

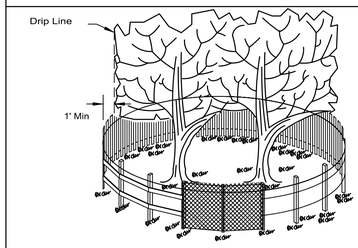
REV. 01/05

TRACKING DETAIL

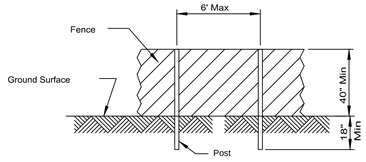


USE DOZER TRACKS TO CREATE GROOVES PERPENDICULAR TO THE SLOPE. GROOVES WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE RUNOFF.

TREE PROTECTION - FENCING



SIDE VIEW

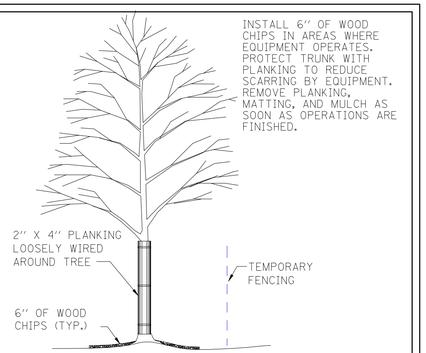


POST AND FENCE DETAIL

NOTES:

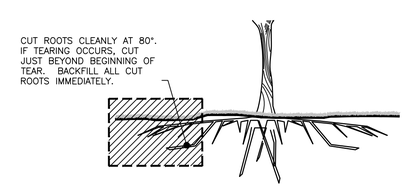
1. The fence shall be located a minimum of 1 foot outside the drip line of the tree to be saved and in no case closer than 5 feet to the trunk of any tree.
2. Fence posts shall be either standard steel posts or wood posts with a minumum cross sectional area of 3.0 sq. in.
3. The fence may be either 40" high snow fence, 40" plastic web fencing or any other material as approved by the engineer/inspector.

REFERENCE			STANDARD DWG. NO.
Project		NRCS Natural Resources Conservation Service	IL-690
Designed	Date		SHEET 1 OF 1
Checked	Date		DATE 4-7-94
Approved	Date		



TYP. TREE TRUNK PROTECTION DETAIL

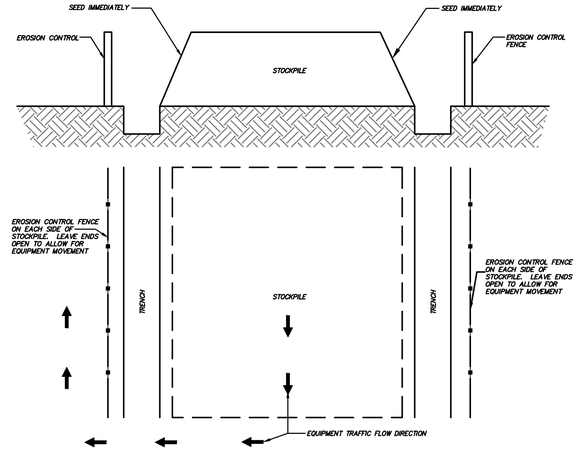
SCALE: NTS



TYP. ROOT PRUNING DETAIL

SCALE: NTS

STOCKPILE DETAIL



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CAD DATE: 3/9/2016 1:24:18 PM		IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.	
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CRYSTAL LAKE, ILLINOIS

CIVIL SITEWORK

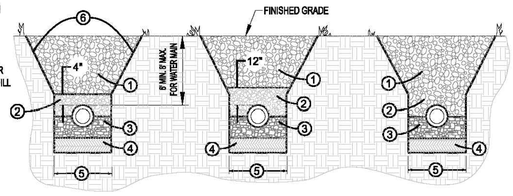
EROSION CONTROL DETAILS

SHEET NO.

C-11

UG-03

1. TRENCH BACKFILL TO SUBGRADE AND WITHIN 2 FEET OF PROPOSED PAVEMENT, DRIVEWAY, CURB AND GUTTER OR SIDEWALK. TRENCH BACKFILL MATERIALS SHALL BE IDOT APPROVED GRADATION CA-6, GRADE 7, 8, OR 9 COMPACTED TO 90% OF MODIFIED PROCTOR DENSITY. IN NON-STRUCTURAL AREAS BACKFILL WITH APPROVED EXCAVATED MATERIALS.
2. INITIAL BACKFILL TO DEPTH AS INDICATED. MATERIAL SHALL BE IDOT APPROVED GRADATION CA-6, GRADE 7, 8, OR 9.
3. PIPE BEDDING SHALL BE FRACTURED GRANULAR MATERIAL IDOT GRADATION CA-7 OR CA-11 FROM 4 INCHES BELOW HORIZONTAL CENTER OF PIPE.
4. UNSUITABLE MATERIAL TO BE REMOVED WHERE DIRECTED BY THE ENGINEER AND REPLACED WITH COMPACTED SUITABLE MATERIAL.
5. TRENCH WIDTH:
   PIPE O.D. + 12 INCHES MINIMUM
   PIPE I.D. + 18 INCHES MAXIMUM
6. CONTRACTORS SHALL COMPLY WITH THE LATEST OSHA STANDARDS INCLUDING, BUT NOT LIMITED TO: SLOPING AND BENCHING TRENCHING WALLS; TRENCH SUPPORT AND SHORING SYSTEMS; SHIELD SYSTEMS; AND HAZARDOUS ATMOSPHERES.



SECTION A:
WATER MAIN (DIP*)
FORCE MAIN (DIP*)
SANITARY SEWER MAIN & SERVICES (ESVCP,DIP*)

SECTION B:
SANITARY SEWER & SERVICES (PVC)
STORM SEWER (PVC)
SANITARY MAIN & WATER MAIN (HDPE)

SECTION C:
STORM SEWER (RCP)

* NOTE: ALL DUCTILE IRON SHALL BE SUBJECT TO POLY WRAP PER CITY ENGINEER

* FA-6 IS ALLOWED FOR TRENCH BACKFILL (ITEM #1)

Approved: City Engineer
Victor C. Ramirez, P.E.
Director of Engineering and Building

Drawing Name: **TYPICAL TRENCH CROSS SECTION**

Drawing Number: UG-03
Date: 6/1/2007
Drawn: EM Checked: LZ

CRYSTAL LAKE ILLINOIS Engineering Division

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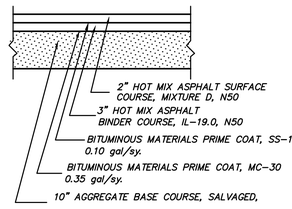
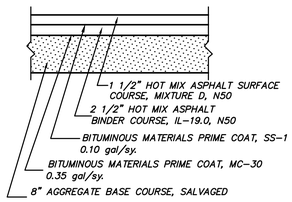
HEAVY DUTY HMA PAVEMENT SECTION



- 2" HOT MIX ASPHALT SURFACE COURSE, MIXTURE D, N50
- 3" HOT MIX ASPHALT BINDER COURSE, IL-19.0, N50
- BITUMINOUS MATERIALS PRIME COAT, SS-1 0.10 gal/sy.
- BITUMINOUS MATERIALS PRIME COAT, MC-30 0.35 gal/sy.
- 10" AGGREGATE BASE COURSE, SALVAGED,

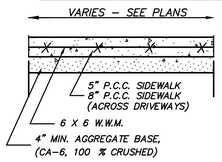
HEAVY DUTY PAVEMENT AREAS ARE SHADED ON THE PLANS

STANDARD DUTY HMA PAVEMENT SECTION



- 1 1/2" HOT MIX ASPHALT SURFACE COURSE, MIXTURE D, N50
- 2 1/2" HOT MIX ASPHALT BINDER COURSE, IL-19.0, N50
- BITUMINOUS MATERIALS PRIME COAT, SS-1 0.10 gal/sy.
- BITUMINOUS MATERIALS PRIME COAT, MC-30 0.35 gal/sy.
- 8" AGGREGATE BASE COURSE, SALVAGED

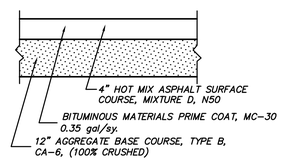
SIDEWALK/PATIO SECTION



- 5" P.C.C. SIDEWALK
  8" P.C.C. SIDEWALK (ACROSS DRIVEWAYS)
- 6 X 6 W.W.M.
- 4" MIN. AGGREGATE BASE, (CA-6, 100 % CRUSHED)

TYPICAL ALL EXTERIOR CONCRETE:
- CLASS SI CONCRETE
- 4000# CONCRETE
- CONTROL JOINTS CUT @ 5' O.C.

CLASS "D" PATCH



- 4" HOT MIX ASPHALT SURFACE COURSE, MIXTURE D, N50
- BITUMINOUS MATERIALS PRIME COAT, MC-30 0.35 gal/sy.
- 12" AGGREGATE BASE COURSE, TYPE B, CA-6, (100% CRUSHED)

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APPROVED: JFV JOB NUMBER: 86150398
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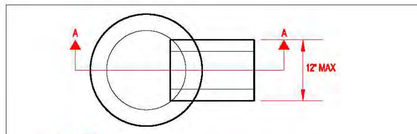
CIVIL SITEWORK
STANDARD CONSTRUCTION DETAILS

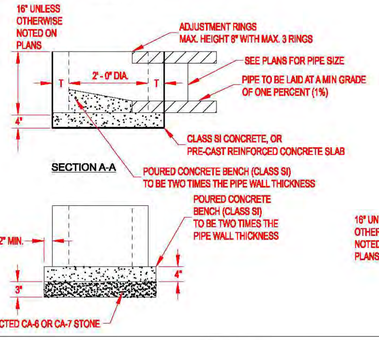
SHEET NO.
C-12

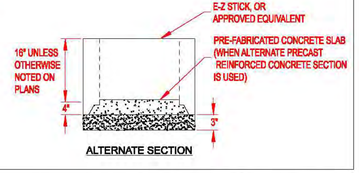
UD-01a



CASTING SCHEDULE		
LOCATION	EJIW	NEENAH
B or M 6.12 C&G	7235 M2	R3502-A
DEPRESSED CURB	7210 M3	R-3611
PAVED	1920	R-1713
NON-PAVED	1020	R-2535

ALTERNATE MATERIALS FOR WALLS	T
PRE-CAST REINFORCED CONCRETE SECTIONS	3"





Approved: City Engineer	Drawing Name	Drawing Number	
Victor C. Ramirez, P.E. Director of Engineering and Building	DRAINAGE STRUCTURES: INLET, TYPE A	UD-01a	CRYSTAL LAKE ILLINOIS Engineering Division
		Date: 4/15/2007	
		Drawn EM / Checked LZ	

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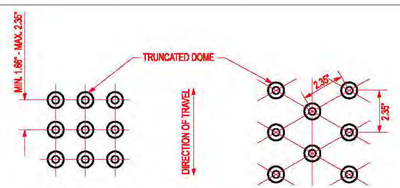
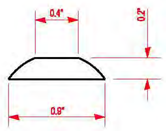
RD-03b



DETECTABLE WARNINGS DETAIL



TRUNCATED DOME DETAIL

NOTES:

1. THIS DETAIL IS TAKEN FROM ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) STANDARD 424001-04
2. DETECTABLE WARNINGS SHALL BE INSTALLED AT CURB RAMPS, MEDIANS AND PEDESTRIAN REFUGE ISLANDS, AT-GRADE RAILROAD CROSSINGS, TRANSIT PLATFORM EDGES, AND OTHER LOCATIONS WHERE PEDESTRIANS ARE REQUIRED TO CROSS A HAZARDOUS VEHICULAR WAY. DETECTABLE WARNINGS SHALL ALSO BE INSTALLED AT ALLEYS AND COMMERCIAL ENTRANCES WHEN PERMANENT TRAFFIC CONTROL DEVICES ARE PRESENT.
3. THE MAXIMUM SLOPE OF THE SIDE FLARE FOR TYPE B RAMPS SHALL BE 1V:10H; HOWEVER, IF THE WIDTH OF THE LANDING AREA BETWEEN THE TOP OF THE RAMP AND AN OBSTRUCTION IS LESS THAN 4.0' THEN THE MAXIMUM SLOPE SHALL BE 1V:12H.
4. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISCPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
5. SEE RD-03a FOR ADDITIONAL SIDEWALK RAMP DETAILS.
6. SIDEWALK RAMPS AND DETECTABLE WARNINGS SHALL UTILIZE RED CONCRETE.

Approved: City Engineer	Drawing Name	Drawing Number	
Victor C. Ramirez, P.E. Director of Engineering and Building	SIDEWALK RAMPS: DETECTABLE WARNINGS (MODIFIED IDOT 424001-04)	RD-03b	CRYSTAL LAKE ILLINOIS Engineering Division
		Date: 4/15/2007	
		Drawn EM / Checked MS	

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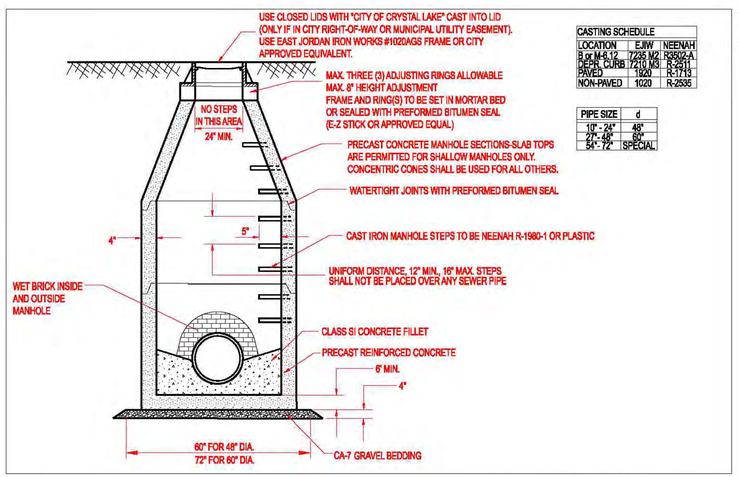
UD-01d



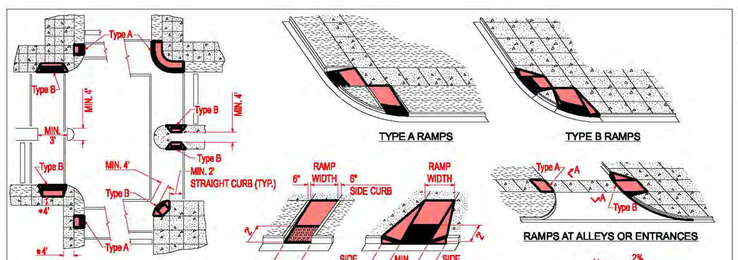
CASTING SCHEDULE		
LOCATION	EJIW	NEENAH
B or M-6.12	7235 M2	R3502-A
DEPR. CURB	7210 M3	R-3611
PAVED	1920	R-1713
NON-PAVED	1020	R-2535

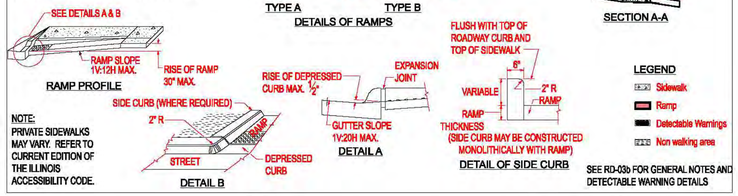
PIPE SIZE	d
10" - 24"	48"
27" - 48"	60"
54" - 72"	SPECIAL

Approved: City Engineer	Drawing Name	Drawing Number	
Victor C. Ramirez, P.E. Director of Engineering and Building	STORM MANHOLE TYPE A	UD-01d	CRYSTAL LAKE ILLINOIS Engineering Division
		Date: 4/15/2007	
		Drawn EM / Checked LZ	

L:\ENGINEERING AND BUILDING\ENGINEERING\DETAILS AND STANDARDS\

RD-03a





Approved: City Engineer	Drawing Name	Drawing Number	
Victor C. Ramirez, P.E. Director of Engineering and Building	PUBLIC SIDEWALK RAMP DETAIL (MODIFIED IDOT 424001-04)	RD-03a	CRYSTAL LAKE ILLINOIS Engineering Division
		Date: 4/15/2007	
		Drawn EM / Checked MS	

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420 N. FRONT STREET, SUITE 100
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McHenry County College

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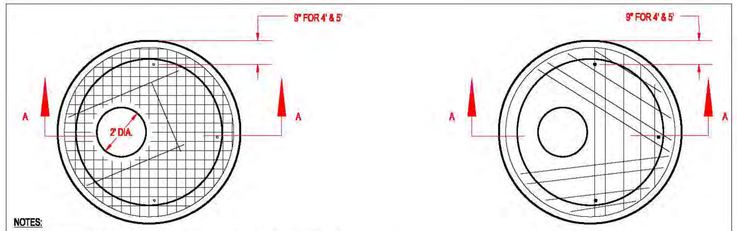
PARKING LOT A RECONSTRUCTION
CRYSTAL LAKE, ILLINOIS

CIVIL SITEWORK
STANDARD CONSTRUCTION DETAILS

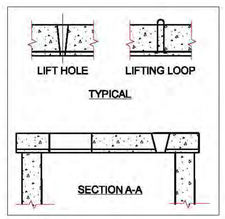
SHEET NO.
C-13

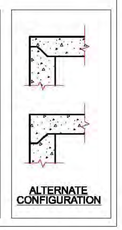
UD-02b



NOTES:

1. PRECAST FLAT TOPS SHALL SHALL CONFORM TO SECTION 504 OF THE STANDARD SPECIFICATIONS.
2. REINFORCEMENT BARS OR WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 1006.10 OF THE STANDARD SPECIFICATIONS.
3. JOINT CONFIGURATION AND DIMENSIONS SHALL MATCH AND FIT THE RISER JOINT DETAIL.
4. LIFTING DEVICES OTHER THAN THAT SHOWN MAY BE USED SUBJECT TO APPROVAL BY THE ENGINEER.
5. THE FLAT SLAB TOP MAY BE USED IN LIEU OF THE TAPERED TOPS SHOWN ON STANDARD 1514, 1526, 1527, OR 1888, AT THE OPTION OF THE CONTRACTOR OR WHEN FIELD CONDITIONS PROHIBIT THE USE OF TAPERED TOPS.
6. THE COST OF FURNISHING AND INSTALLING THE FLAT SLAB TOP SHALL BE INCLUDED IN THE UNIT PRICE FOR CATCH BASIN OR MANHOLE.





Approved: City Engineer

Victor C. Ramirez, P.E.
Director of Engineering and Building

Drawing Name

ECCENTRIC FLAT TOPS FOR CURB INLET STORM MANHOLES

Drawing Number: UD-02b
Date: 4/15/2007
Drawn: EM Checked: LZ

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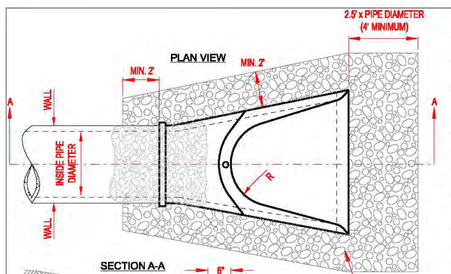
UD-02d



NOTES:

1. CONCRETE FLARED END SECTIONS SHOULD BE CONSIDERED FOR USE WITH CONCRETE PIPE CULVERTS HAVING SKEWS NO GREATER THAN 15 DEGREES.
2. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS III, WALL B REINFORCED CONCRETE PIPE.
3. PRECAST CONCRETE FLARED END SECTION FOR PIPE DIAMETER REQUIRED SHALL BE AS INDICATED ON DETAIL PLAN FOR EACH INDIVIDUAL INSTALLATION.
4. THE END BLOCK SHALL BE PLACED PRIOR TO THE INSTALLATION OF THE FLARED END SECTION. THE END BLOCK SHALL BE BACKFILLED IN ACCORDANCE WITH ART. 502.10 OF THE STANDARD SPECIFICATIONS. THIS COST SHALL BE INCIDENTAL TO EACH END SECTION.
5. RIP RAP SHALL CONFORM TO SECT. 281 OF THE STANDARD SPECIFICATIONS EXCEPT ONLY 4'-8" STONE WILL BE ALLOWED. INSTALL FABRIC UNDER STONE.
6. STANDARD IDOT GALVANIZED GRATE REQUIRED FOR 15" DIAMETER AND LARGER.

Approved: City Engineer

Victor C. Ramirez, P.E.
Director of Engineering and Building

Drawing Name

FLARED END SECTION (PRECAST CONCRETE PIPE)

Drawing Number: UD-02d
Date: 4/15/2007
Drawn: EM Checked: LZ

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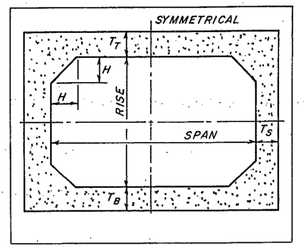


NOTE: The haunch dimension H, is equal to the wall thickness T_S.

STANDARD BOX SECTION

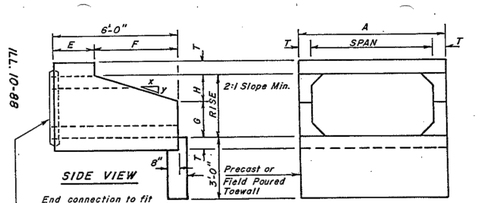
Span, Feet	T_T, Inches		T_B, Inches		T_S, Inches	
	M259	M273	M259	M273	M259	M273
3	4	7	4	6	4	4
4	5	7 1/2	5	6	5	5
5	6	8	6	7	6	6
6	7	8	7	7	7	7
7	8	8	8	8	8	8
8	8	8	8	8	8	8
9	9	9	9	9	9	9
10	10	10	10	10	10	10
11	11	11	11	11	11	11
12	12	12	12	12	12	12

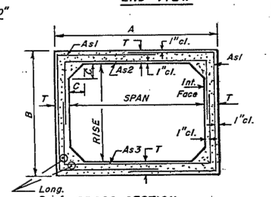
STANDARD THICKNESSES

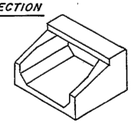
ILL. 1-87

2/3.5

ILL. 10-88







PLAN

Minimum concrete strength shall be 5,000 p.s.i after 28 days.
The joints of the Precast Box Sections shall be sealed with mastic in accordance with Art. 718.11 of the Standard Specifications for Road and Bridge Construction.
The terms As1, As2 & As3 denote the required steel areas for reinforcement as specified in AASHTO M-259 and ASTM C-789.
Reinforcement shall be welded wire fabric conforming to ASTM Specification A-185.

SPAN X RISE	T (IN.)	A (FT-IN)	B (FT-IN)	C (IN.)	L (FT-IN)	F (FT-IN)	G (FT-IN)	N (FT-IN)	SLOPE (X-Y)
2'X 2'	4	2-8	2-8	4	VAR.	3-0	1-0	1-0	3:1
3'X 2'	4	3-8	2-8	4		3-0	1-0	1-0	3:1
3'X 3'	4	3-8	3-8	4		4-0	1-8	1-4	3:1
4'X 2'	5	4-10	2-10	5		3-0	1-0	1-0	3:1
4'X 3'	5	4-10	3-10	5		4-0	1-8	1-4	3:1
4'X 4'	5	4-10	4-10	5		4-0	2-0	2-0	2:1
5'X 2'	6	6-0	3-0	6		3-0	1-0	1-0	3:1
5'X 3'	6	6-0	4-0	6		4-0	1-8	1-4	3:1
5'X 4'	6	6-0	5-0	6		4-0	2-0	2-0	2:1
5'X 5'	6	6-0	6-0	6		4-0	3-0	2-0	2:1
6'X 2'	7	7-2	3-2	7		3-0	1-0	1-0	3:1
6'X 3'	7	7-2	4-2	7		4-0	1-8	1-4	3:1
6'X 4'	7	7-2	5-2	7		4-0	2-0	2-0	2:1
6'X 5'	7	7-2	6-2	7		4-0	3-0	2-0	2:1
7'X 3'	8	8-4	4-4	8		4-0	1-8	1-4	3:1
7'X 4'	8	8-4	5-4	8		4-0	2-0	2-0	2:1
7'X 5'	8	8-4	6-4	8		4-0	3-0	2-0	2:1
8'X 3'	8	9-4	4-4	8		4-0	1-8	1-4	3:1
8'X 4'	8	9-4	5-4	8		4-0	2-0	2-0	2:1
8'X 5'	8	9-4	6-4	8		4-0	3-0	2-0	2:1
9'X 3'	9	10-6	4-6	9		4-0	1-8	1-4	3:1
9'X 4'	9	10-6	5-6	9		4-0	2-0	2-0	2:1
9'X 5'	9	10-6	6-6	9		4-0	3-0	2-0	2:1
10'X 4'	10	11-8	5-8	10		4-0	2-0	2-0	2:1
10'X 5'	10	11-8	6-8	10		4-0	3-0	2-0	2:1
					VAR.				

PRECAST HEADWALL

BID ONLY

DRAWN BY: CWF JOB DATE: 2016
APPROVED: JFV JOB NUMBER: 86150398
CAD DATE: 3/9/2016 1:24:18 PM
CAD FILE: \\hrgmhnas\Data\86150398\CAD\Dwgs\C\86150398-Details.dwg

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1"
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

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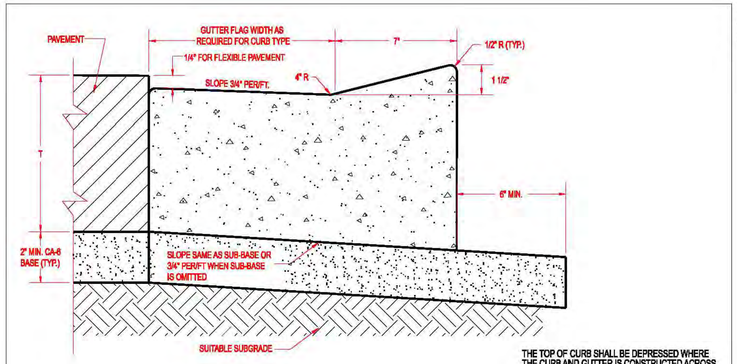
CIVIL SITEWORK
STANDARD CONSTRUCTION DETAILS

SHEET NO.
C-14

RD-04b



THE TOP OF CURB SHALL BE DEPRESSED WHERE THE CURB AND GUTTER IS CONSTRUCTED ACROSS ALLEYS AND FOR PRIVATE DRIVES OR WHERE DIRECTED BY THE ENGINEER.

THICKNESS OF PAVEMENT "T". WHEN CURB AND GUTTER IS CONSTRUCTED ADJACENT TO FLEXIBLE PAVEMENT, THE VERTICAL THICKNESS OF THE GUTTER FLAG SHALL BE 9 INCHES. FOR BAM PAVEMENT SECTIONS THE FLAG SHALL BE THE SAME THICKNESS AS THE PAVEMENT.

Approved: City Engineer
Victor C. Ramirez, P.E.
Director of Engineering and Building

Drawing Name: DEPRESSED CURB: DETAIL

Drawing Number: RD-04b
Date: 4/15/2007
Drawn: EM Checked: MS

CRYSTAL LAKE ILLINOIS Engineering Division

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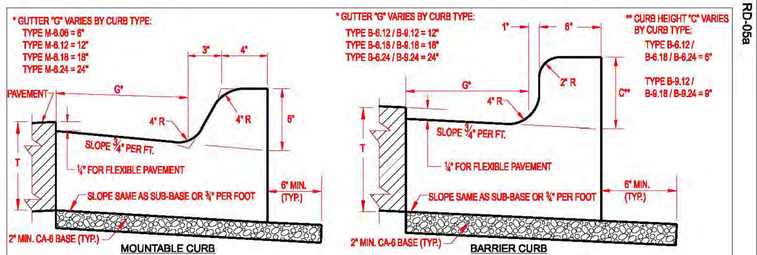
RD-05a



THICKNESS - T - Thickness of pavement when curb and gutter is constructed adjacent to flexible or rigid pavement, the vertical thickness of the gutter flag shall be 9". Also, tie bars shall be omitted.

DRAINAGE OPENINGS - At all locations where metal castings are to be incorporated in the curb and gutter, a 1" thick pre formed expansion joint filler, conforming to the cross sections of the curb and gutter, shall be installed in the curb and gutter a distance of 5 ft. from each side of the metal casting. When the width of the metal casting is less than the width of the curb and gutter, 2 - No. 4 rebars (L = 12 + casting length + 12") shall be incorporated in the continuous portion of concrete gutter in front of the casting.

TRANSITIONS - The transition from full height curb to depressed curb shall be made at the rate of 3" per foot of length or flatter.

(2) - No. 4 steel reinforcing bars shall be incorporated over trench crossings if required by the City Engineer.

JOINTS - In addition to the requirements of Article 606.06 of the Standard Specifications, joints shall be constructed as follows:

Contraction joints and expansion joints shall be installed in the curb or curb and gutter in prolongation with joints in adjacent P.C.C. pavement or base course.

When curb and gutter is constructed adjacent to flexible pavement, a 1" thick pre formed expansion joint filler, conforming to the cross section of the curb and gutter, shall be installed at points of curvature for short radius curves and at construction joints. Contraction joints shall be placed between expansion joints at distances not to exceed 5 feet.

All expansion joints shall be provided with a 1 1/4" dia. x 18" coated smooth dowel bar conforming to Article 1006.10 of the Standard Specifications. The dowel bar shall be fitted with a cap having a pinched stop that will provide 1" of expansion.

All construction joints shall be provided with 1/2" dia. deformed steel tie bars 30" long conforming to AASHTO M-31 or M-53. Tie bars shall be placed on 5' centers. (minimum 2 per joint).

Expansion joints shall be placed at intervals not to exceed 100 feet.

Approved: City Engineer
Victor C. Ramirez, P.E.
Director of Engineering and Building

Drawing Name: CURB: CONCRETE CURB AND GUTTER

Drawing Number: RD-05a
Date: 6/1/2007
Drawn: EM Checked: MS

CRYSTAL LAKE ILLINOIS Engineering Division

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TR-03

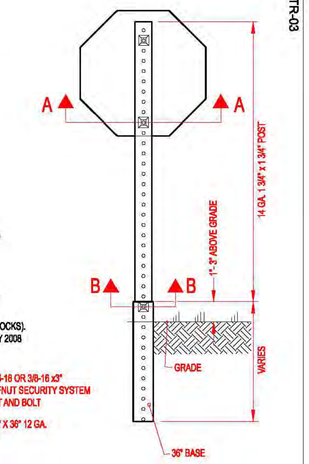
SPECIFICATIONS

1. ALL TRAFFIC CONTROL SIGNS AND POSTS SHALL BE INSTALLED PRIOR TO OCCUPANCY AND SHALL BE INSTALLED ACCORDING TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 728 (LATEST EDITION), AND IDOT POLICY ON ESTABLISHING AND POSTING SPEED LIMITS ON THE STATE HIGHWAY SYSTEM, MAY 2002 EDITION (SPEED LIMIT SIGNS SPACING, PAGE 5).

2. POSTS SHALL BE TELESCOPING SIGNS POSTS, 14 GAUGE 1 3/8" x 1 3/8" x 10' (OR 11' OR 12') WITH A 12 GAUGE 2" x 2" x 36" BASE. TELESCOPING SIGN SUPPORTS SHALL CONFORM TO SECTION 728 OF THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).

3. MOUNTING HOLES SHALL BE 7/16" IN DIAMETER +/- 1/16" AND WILL BE SPACED 1" ON CENTER ON ALL SIDES FOR THE ENTIRE LENGTH OF THE POSTS. HOLES SHALL BE ON THE CENTERLINE OF EACH SIDE IN TRUE ALIGNMENT AND OPPOSITE EACH OTHER TO ACCEPT A 3/8" BOLT THROUGH THE POST AT ANY LOCATION. THE POST SHALL HAVE A SMOOTH GALVANIZED FINISH APPLIED EITHER BEFORE OR AFTER FORMING.

4. ALL SIGN PANELS SHALL BE IDOT STANDARD 0.080" ALUMINUM BLANKS WITH 1 1/2" RADIUS ON ALL CORNERS. SIGN FACE MATERIAL SHALL BE 3M DG3 REFLECTORIZED SHEETING (ASTM PROPOSED TYPE 11, ILLINOIS TYPE ZZ).
   - STANDARD STOP SIGN (R1-1), YIELD SIGN (R1-2), AND DO NOT ENTER (R5-1) SHALL BE 30" x 30"
   - STANDARD WARNING SIGNS SHALL BE 30" x 30"
   - NO PARKING SIGNS SHALL BE 12" x 18" (R7-2a)
   - SCHOOL ZONE AND PEDESTRIAN CROSSING SIGNS SHALL BE 30" x 30" WITH SUPPLEMENTAL PLATES 24" x 12"
   - SPEED LIMIT SIGNS SHALL BE 24" x 30" (R2-1)
     SPEED LIMIT SIGNS FOR 30-MPH OR LESS IN URBAN AREAS SHALL BE SPACED 600 FEET TO 1,320 FEET (2-4 BLOCKS). REFER TO IDOT POLICY ON ESTABLISHING AND POSTING SPEED LIMITS ON THE STATE HIGHWAY SYSTEM, MAY 2008 EDITION (SPEED LIMIT SIGNS SPACING, PAGE 5).



Approved: City Engineer
Victor C. Ramirez, P.E.
Director of Engineering and Building

Drawing Name: TRAFFIC CONTROL SIGN AND POST

Drawing Number: TR-03
Date: 4/15/2007
Drawn: EM Checked: TR

CRYSTAL LAKE ILLINOIS Engineering Division

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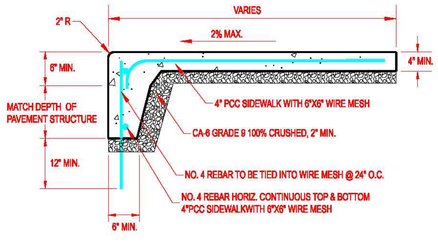
RD-05c



CLASS SI CONCRETE SHALL BE USED THROUGHOUT (UNLESS OTHERWISE NOTED)

Approved: City Engineer
Victor C. Ramirez, P.E.
Director of Engineering and Building

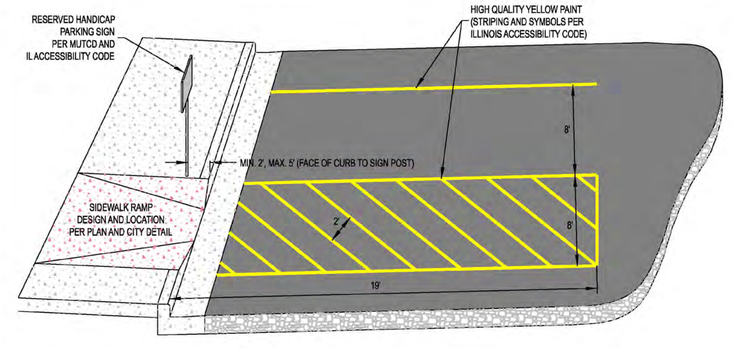
Drawing Name: CURB: SIDEWALK WITH INTEGRAL CURB

Drawing Number: RD-05c
Date: 4/15/2007
Drawn: EM Checked: MS

CRYSTAL LAKE ILLINOIS Engineering Division

L:\ENGINEERING AND BUILDING\ENGINEERING\DETAILS AND STANDARDS\

TR-06



NOTES:

1. MAX. SLOPE = 2%
2. CONCRETE PARKING BUMPERS REQUIRED IF BARRIER CURB NOT PRESENT.
3. REFER TO CURRENT EDITION OF THE ILLINOIS ACCESSIBILITY CODE, SECTION 400.310(c) AND ILLUSTRATIONS "B" (FIGURE 9), "C", AND "D".

Approved: City Engineer
Victor C. Ramirez, P.E.
Director of Engineering and Building

Drawing Name: TYPICAL HANDICAP ACCESSIBLE PARKING STALL

Drawing Number: TR-06
Date: 6/1/2007
Drawn: EM Checked: RP

CRYSTAL LAKE ILLINOIS Engineering Division

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CIVIL SITEWORK
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SHEET NO.
C-15