SUPERIOR

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City of Superior, Wisconsin

FIBER TO THE HOME

OUTSIDE PLANT CONSTRUCTION SPECIFICATIONS

REVISION DATE: 09/29/2025

Sheet Index

SECTION 01 00 00 - GENERAL REQUIREMENTS

1.01 SUMMARY OF WORK

A) The work under this Contract consists of providing all labor, materials, equipment, and supervision necessary for the complete and functional installation of a Fiber to the Home (FTTH) network within the City of Superior, including but not limited to: underground conduit systems, aerial fiber installation, handholes, pull boxes, vaults, passive cabinets, fiber optic cable placement, splicing, testing, site restoration, traffic control, and all associated civil and electrical work, as detailed in these Specifications and accompanying Plans.

B) All work shall be performed in strict accordance with the Contract Documents, applicable codes, standards, and industry best practices.

1.02 DEFINITIONS

A) **City**: City of Superior, Wisconsin.

B) **Owner**: City of Superior, Wisconsin.

C) **Project Manager**: The designated City representative responsible for day-to-day oversight, approvals, and coordination of the Project.

D) **Engineer**: The City Engineer or authorized Professional Engineer representative responsible for technical design approvals and ultimate resolution of technical disputes.

E) **Contractor**: The entity awarded the Contract for the execution of the Work.

F) **Plans**: The engineering drawings, details, and schedules provided for the Project.

G) **BMP (Best Management Practice)**: Techniques or methods utilized for the control of erosion and sedimentation.

H) **MUTCD (Manual on Uniform Traffic Control Devices)**: The latest edition of the Wisconsin Manual on Uniform Traffic Control Devices.

I) **OTDR (Optical Time Domain Reflectometer)**: An optoelectronic instrument used to characterize an optical fiber.

J) **TPZ (Tree Protection Zone)**: A specified area around a tree defined by the diameter of the tree trunk (measured in inches at chest height) multiplied by 1.5 and expressed as feet, measured as a radius from the trunk, as shown in the details within the Tree Protection Zone Details.

1.03 CONTACTS

A) For project coordination, communication, and official notifications, the following key contacts shall be utilized:

1) Facility Owner

a) Organization: City of Superior
b) Contact Name: Stephanie Becken - Broadband Manager
c) Contact Phone: 715.395.1496
d) Contact Email: beckens@superiorwi.gov

2) FTTH Design

a) Organization: Mi-Tech Services, Inc.
b) Contact Name: Nate Cockburn - Project Design Lead
c) Contact Phone: 763.402.7934
d) Contact Email: ncockburn@mi-tech.us
e) Contact Name: Jonathan Whitley - OSP Team Manager
f) Contact Phone: 612.719.4214
g) Contact Email: jwhitley@mi-tech.us

1.04 REFERENCES

A) The latest editions of the following codes, standards, and manuals shall govern the Work unless otherwise specified herein:
   1) WISDOT Standard Specifications for Highway and Structure Construction.
   2) WISDOT Facilities Development Manual (FDM) (Specifically HMM 09-15-25 Location Requirements).
   3) Wisconsin Manual on Uniform Traffic Control Devices (WMUTCD).
   4) Occupational Safety and Health Administration (OSHA) Standards.
   5) National Electrical Safety Code (NESC).
   6) National Electrical Code (NEC).
   7) American Society of Civil Engineers (ASCE 38-22) Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data.
   8) ANSI/SCTE 77-2017 (for Underground Enclosure Integrity).
   9) Wisconsin Department of Natural Resources (WI DNR) Technical Standards (specifically 1059 for Revegetation).
   10) Public Service Commission of Wisconsin Rules for Construction of Underground Electric Supply and Communication Systems.
   11) City of Superior Code of Ordinances (specifically Chapter 112, Section 33 - Heavy Traffic (Truck) Route).
   12) City of Superior construction specifications, sidewalk drawings, and design standards as applicable.
   13) Manufacturer's recommendations for all installed materials and equipment.
   14) WISDOT Construction and Materials Manual (CMM)

1.05 CONTRACTOR RESPONSIBILITIES

A) The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B) The Contractor shall be responsible for locating all utilities, whether public or private, prior to excavation or boring. Information shown on Plans regarding existing underground facilities is approximate; the Owner is not responsible for its accuracy or completeness.

C) The Contractor shall have full responsibility for reviewing and checking all utility information, locating all underground facilities, coordinating with utility owners, protecting facilities, and repairing any damage resulting from the work at no additional cost to the Owner.

D) The Contractor shall notify affected utility companies/agencies in writing at least forty eight (48) hours prior to beginning construction.

E) The Contractor shall call 811 for locates no less than two (2) business days or no more than three (3) business days before beginning any excavation or demolition.

F) The Contractor shall immediately notify the Project Manager of any damage or changed condition caused by construction activities that may result in a disruption of sanitary sewer service.

G) The Contractor shall obtain all necessary permits from appropriate governing regulatory agencies (City of Superior, railroad, WISDOT, Superior Water Light & Power, WDNR, etc.) prior to commencing work.

H) The Contractor shall comply with all applicable Federal, State, and Local laws, ordinances, and requirements governing excavation, safety, environmental protection, and all other aspects of the work.

I) The Contractor shall take all available precautions to control dust, per WI DNR Technical Standard 1068 and as approved by the Project Manager.

J) The Contractor shall immediately repair or replace any damage to public or private property (fences, walls, pavement, grass, trees, etc.) resulting from the work, at no additional cost to the Owner. This work shall be subsidiary to the cost of the contract unless otherwise noted.

K) The Contractor shall re-establish any property marker, benchmark, etc., disturbed during construction to its original location and elevation (reference WISDOT CMM Section 785 and WISDOT FDM Section 9-5 for WISDOT rights of way).

L) The Contractor is responsible for all fines, fees, or expenses resulting from failure to comply with permit conditions, failure to obtain permits, sediment or dirt discharges from the site, or the cost to restore damaged facilities or damage to property resulting from their operations. The costs for fines, fees and restoration are to be considered incidental to the contract prices and will not be paid or reimbursed separately by the Owner.

M) The Contractor will follow an Erosion Control Plan approved by the Project Manager.

N) The Contractor is solely responsible for installation, implementation, maintenance, effectiveness, and removal of all erosion control devices and Best Management Practices, in accordance with approved erosion control plan.

O) Inspections of erosion control devices, disturbed areas, and vehicle entry/exit areas shall occur weekly and after significant rain events (0.5" or more), with records maintained by the Contractor, and to be made available to the Owner upon request.

1.06 SUBMITTALS

A) The Contractor shall submit the following for review and approval by the Project Manager prior to commencing relevant work:
   1) Traffic Control Plan: A comprehensive plan for the entire project, adhering to WMUTCD standards. No work shall commence until approved by the Project Manager.
   2) Erosion Control Plan: An Erosion Control Plan following Best Management Practices (BMPs) for the project. No land disturbance shall proceed until approved by the Project Manager. The Erosion Control Plan shall be maintained and updated as the project progresses.
   3) Product Data: Contractor shall submit copies of Product Data Sheets and Specification Sheets for all materials to be furnished on the project to the Project Manager two (2) weeks prior to the start of construction. Project Data shall clearly mark the proposed product, manufacturer and part/product numbers proposed for use on the project, and items that are not applicable shall be crossed out on the submittal. Project manager will review materials for compliance with the specifications and contract drawings and approve, request changes, or request clarification to the submitted materials. Contractor shall not incorporate any product into construction without prior written approval of the Project Manager. Products to be submitted include but are not limited to conduit, handholes, pull boxes, vaults, fiber optic cable, locate posts and passive cabinets.

B) The Contractor shall submit the following test results prior to the Project Manager after completing installation of fiber optic systems and completing testing. Final Payment will not be made on any portion of the fiber installation until test results have been submitted showing compliance with specifications and contract documents.
   1) Fiber Optic Test Results: Detailed OTDR and optical source/power meter test results as specified in Section 33 60 00, Part 3.
   2) As-Built Drawings and GIS Locates/Coordinates: Final locations of all installed infrastructure (conduit, handholes/pull boxes/vaults, fiber runs, cabinets) upon project completion. Record drawings shall be submitted to the City in the following formats: ESRI Geodatabase, ESRI Shapefile, Geopackage, PDF.

1.07 WORK HOURS AND SITE CONDITIONS

A) Work hours shall be Monday - Friday, 6:00 AM - 8:00 PM, unless prior written approval for extended hours or weekend work is granted by the Superior City Public Works Department. No work is allowed on holidays unless explicitly approved in advance.

B) The Contractor shall conduct operations and cleanup to cause the least possible obstruction and inconvenience to traffic, pedestrians, cyclists, and adjacent property owners.

C) No materials may be stored in the roadway pavement area, curb/gutter, or sidewalk so as to block drainage or create a hazard to the traveling public.
D) Any stockpile or equipment remaining in the road right of way at the end of the workday shall have MUTCD compliant traffic control installed until removed. No additional payment will be made for associated erosion control, roadway/boulevard cleanup, or hydroseeding.
E) No stockpile shall impede regular traffic in all driving lanes at any time. Vision triangles shall also be unimpeded at intersections and driveways throughout construction.
F) No trash, excess material, or rubbish shall be placed in manholes, handholes/pull boxes/vaults, or splice boxes. All excess material shall be removed and properly disposed of by the Contractor, in accordance with applicable rules and regulations.
G) The Owner will not make arrangements for contractor parking or material storage. Where parking is restricted, the Contractor shall obtain permits from the City's Police Department at their own expense.
H) The Contractor shall not access electric vaults; this work shall only be handled by power utility employees.
I) Site entry and exits shall be maintained to prevent tracking of sediment and dirt onto off-site roadways. Any sediment/dirt deposited on roadways shall be removed immediately, at least once per day, and as directed by the Project Manager.
J) All open excavations shall be protected if left unattended by the Contractor. Protection methods can include temporary fencing, barriers or other devices approved by the Project Manager.
K) **Winter Construction Moratorium**: Construction activities involving excavation, trenching, paving, or any ground disturbance shall generally cease when the average daily ambient air temperature falls below 25°F for three consecutive days, or when ground frost penetrates deeper than 6 inches, whichever occurs first. A construction moratorium shall typically be in effect from December 1st through April 1st, or as otherwise directed by the Project Manager, unless specific written approval for winter work is granted. Any winter work approval will require the Contractor to demonstrate adequate measures for maintaining material quality, achieving proper compaction, ensuring site safety, and preventing environmental degradation under freezing conditions. All costs associated with winter work, including specialized materials, heating, and protection, shall be borne by the Contractor unless explicitly provided for in the Contract and approved by the Project Manager.
L) Any removal of concrete sidewalks or concrete driveways shall not be completed if the forecast conditions call for temperatures below 50 degrees at night for the next four (4) days. All concrete sidewalks and driveways shall be replaced or temporarily replaced with asphalt prior to winter conditions to allow for full use throughout the winter months. Temporary restorations will be completed at the contractor’s expense and will not be paid for separately. Under no circumstance shall sidewalks or driveways be removed and not replaced prior to winter conditions.

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

1.01 TRAFFIC CONTROL

A) The Contractor shall prepare and submit a Traffic Control Plan for Project Manager approval prior to commencing construction activities.
B) The Contractor is responsible for maintaining identified controls and implementing changes as construction progresses. No additional payment will be made for maintenance, or modification of the traffic control plan based on progress of work.
C) All traffic control devices (signs, markings, barricades) must conform to the latest WMUTCD. If lane closures are required, the City of Superior must be notified in advance.

D) Barricades and signs shall be placed so as not to interfere with sight distance/vision triangles for drivers entering roadways or side streets.
E) Portable supports for barricades and signs used in lane closures or traffic staging shall conform to WMUTCD and be subject to Project Manager approval.

1.02 EROSION AND SEDIMENT CONTROL

A) The Contractor shall comply with all local, state, and federal erosion control and water quality requirements, laws, and ordinances.
B) National Pollutant Discharge Elimination System (NPDES) permits from the WI DNR are required for sites disturbing one acre or more, or as part of a common plan of development. The Contractor is responsible for obtaining any required NPDES permits.
C) Erosion control devices shown on the approved Erosion Control Plan shall be installed prior to land disturbance. Land disturbance shall not proceed until a pre-construction inspection has been approved by the Project Manager.
D) Erosion control devices shall remain in place until the protected area has been permanently stabilized with a uniform, good perennial vegetative cover of 70% (no invasive or unpermitted species).
E) The Contractor shall observe the effectiveness of devices and make field adjustments as needed to prevent sediment from leaving the site. The Contractor shall notify the Project Manager if devices are ineffective. The Owner retains the right to add additional practices if necessary.
F) Off-site soil borrow, spoil, and storage areas are considered part of the project site and must comply with all erosion control requirements, including Erosion Control Plan installation and permanent ground cover establishment prior to final approval of the Project Manager.
G) Temporary seeding or other approved stabilization shall be initiated immediately on any disturbed area, unless additional construction is expected within 14 days.
H) The Contractor shall follow good housekeeping practices, continually cleaning up dirt, loose material, and trash as construction progresses.
I) The Contractor shall make repairs to erosion control devices within 24 hours of being instructed to make corrections or observing deficiencies during their erosion control inspection.

SECTION 31 00 00 - EARTHWORK

3.01 EXCAVATION AND BACKFILL (General)

A) All excavation and backfill shall conform to WISDOT Standard Specifications for Highway and Structure Construction and City of Superior Construction Specifications, except as modified herein.
B) Trench side slopes shall meet OSHA standards in effect at the time of construction. Sheeting, shoring, and bracing shall be required when side slope standards are not met. A trench box or shoring meeting OSHA standards may be acceptable unless negated by groundwater control measures.
C) Excavation backfill shall be placed in 12-inch or shallower, thoroughly compacted layers.
D) Due to the heavy clay makeup of the regional soil, the top layer of the excavation backfill shall consist of "crush and run" gravel material, 1/4" and smaller, not to be finished with open graded rock larger than 1/4". This applies to all excavations where granular backfill is specified or required, including roadway crossings, bore pits, handhole/pull box/vaults, and any other locations where native clay backfill would impede drainage or stability.
E) All cross-road bore pits shall be backfilled in layers not more than eight (8) inches in loose thickness. The base layer shall be Structural Backfill (CMM 325 & WISDOT 209.1) and eight (8) inches of 1 1/4" BAD (WISDOT 305)

compacted. Further backfill layers shall match the existing section above. Each layer shall be thoroughly compacted before the next layer is placed. (Refer to WISDOT 625.2 and 651.3.1).

F) All conduit trenches and potholes shall be backfilled completely to provide safe crossing by the end of each working day or whenever the work zone becomes inactive. The Contractor shall not open any area that cannot be backfilled in the same day/night operation.

G) It should be noted that no test borings were made where conduit runs are to be installed by jacking or trenching. It shall be the Contractor's responsibility to examine job site conditions before submitting bid proposals.

H) **Working in Clay Soils**: The Contractor shall anticipate and account for the presence of heavy clay soils throughout the Project area. Special attention shall be paid to:

1) **Dewatering**: Implementing appropriate dewatering measures as necessary to maintain stable trench conditions and prevent mixing of excessive water with excavated material. If pumping more than 70 gpm contractor shall be required to obtain a permit from WI DNR for dewatering operations.
2) **Spoil Management**: Managing excavated clay material to prevent tracking onto roadways and to ensure proper disposal or reuse in accordance with its characteristics. Excess materials shall be disposed of offsite in accordance with all applicable regulations.
3) **Compaction**: Ensuring proper compaction of all backfill layers within clay-based excavations, as moisture content significantly impacts compaction effectiveness in clay. Contractor shall compact by mechanical means if vibratory compaction is ineffective as approved by Project Manager. Compaction shall be to at least 90% modified proctor outside of roadway and traffic areas, and 95% modified proctor within roadways. In the event of a dispute between the Contractor and the City on the adequacy of the compaction efforts, the City reserves the right to request compaction testing. Compaction testing will be paid for by the Contractor if test results do not pass and by the City if test results meet this specification.
4) **Trench Stability**: Monitoring trench stability in clay, especially after precipitation, and taking all necessary precautions to prevent trench wall collapse.

I) Petroleum-contaminated soil and/or Hazardous Substances may be present in soil and/or groundwater. If a petroleum odor is present during construction, stop work and notify the Project Manager. In the event that petroleum contamination is found by odor, DNR standards for reporting, testing, and clean up will need to be followed.

3.02 TOPSOIL AND RESTORATION

A) Topsoil shall be replaced in a 4" layer and must consist of loam, sandy loam, silty clay loam, or clay loam humus-bearing soils adapted to sustain plant life, ensuring pH ranges from 6.0-7.0.

B) Topsoil shall be kept separate from general trench excavated material and placed on top of trench backfill. The Contractor shall remove all rock from topsoil in cultivated areas. (Refer to WISDOT 625.2 and 651.3.1).

C) Topsoil replacement is required in all areas where topsoil exists. (Refer to WISDOT 209.1 Granular Backfill and CMM 325 Structure Excavation).

D) The Contractor shall revegetate unpaved areas disturbed by construction prior to Project acceptance. Revegetation shall consist of seed sowing, ground cover (not including straw mulch), fertilizing, and watering. Revegetation shall be acceptable when vegetation achieves a uniform perennial coverage of 70%. This work is subsidiary to the Project and no additional compensation shall be allowed.

E) Complete revegetation work in accordance with WI DNR Technical Standards 1059. Seed mixture shall be No. 40, or as detailed in the Plans, as referenced in Section 630 of the WISDOT Standard Specifications. Seed shall be sown using hydroseed methods.

F) The Contractor must seed all disturbed areas upon completion of the Project, following WISDOT 107 Legal Relations and Responsibility to the Public 107.20 Erosion Control Part 4&6.

G) Any applicant or contractor doing work within the City's right-of-way must restore the area to its previous condition and leave it in a clean and neat condition. Any future complaints about cut or damaged tiles or poorly finished slopes or surfaces will be directed back to the Contractor for correction.

SECTION 32 90 00 - PLANTING AND RESTORATION

3.01 TREE PLANTING, PRESERVATION, AND PROTECTION

A) **Description**: The City of Superior acknowledges the importance of trees to the community. No trees shall be removed within the project limits without the approval of the Project Manager.

B) **Materials**: Trees and other vegetation shall be protected and preserved during construction to maximize their survival. All workers on site shall be educated in tree preservation practices. Tree protection devices shall be placed before material deliveries, excavation, or grading begins and be maintained in good repair for the duration of the work, unless otherwise directed by the Project Manager, until landscape restoration begins.

C) **Construction - Tree Protection**:

1) Protection of existing trees shall be accomplished with the establishment of the Tree Protection Zone (TPZ) for each tree and utilizing appropriate methods such as fencing, machinery selection, shoring, construction boxes, and protective ground sheeting. As an example, tree protection may include installing a snow fence with pound-in posts around trees within the current block under construction. This fencing shall be maintained for the duration of work in that immediate area and may be removed and relocated to subsequent construction blocks as the Project progresses.
2) The Contractor may use additional tools or methods, approved by the Project Manager, such as hiring a commercial arborist to advise on best protection practices. If an arborist contests a damage assessment performed by the Project Manager, the Owner will consider the arborist's argument, but the Project Manager's ultimate decision shall prevail.
3) Handheld operating tools, air-excavation or other non-mechanical methods are encouraged for removal or construction activities within the TPZ.
4) Prior to any site work, all trees to be preserved must be protected and maintained in accordance with the TPZ Details.
5) No material or construction equipment shall be stored within the TPZ.
6) No protective devices, signs, utility boxes or other objects shall be nailed to trees.
7) Tree protection fencing shall be erected and approved by the Project Manager at least 24 hours before construction begins in the vicinity of the tree.

D) **Grade Changes**:

1) Grade cuts shall be minimized or eliminated within the TPZ.
2) Areas within the TPZ disturbed by construction activity shall be mulched with a 2-3" deep layer of shredded bark mulch within 4 hours of disturbance as temporary root protection.

E) **Trenching and Tunneling**:

1) Trenching shall be done outside the TPZ. Trenchless techniques (boring, tunneling) shall be employed within the TPZ. Boring through a TPZ shall be a minimum of 48” depth below existing grade.
2) Pruning of branches shall be done only under the requirements and direction of the Project Manager.

F) **Bridging Roots**:

1) One option for working near large roots is to bridge over them by supporting the raised section with concrete pillars or increasing the base layer over the root growth area.

2) When increasing the base course material, coarse sand or pea gravel shall be used with a thin layer of foam board.
3) Any bridged sections must maintain ADA allowed slopes of 1:20. Bridging roots are anticipated behind sidewalks and on side streets.

G) **Root Grinding**:
1) For roots 2" diameter or larger, grinding is preferred over full severing, using a stump/root grinder, chainsaw, or debarking tool.
2) Roots must maintain at least 1/3 of their original diameter when grinding.
3) When possible, apply a layer of rigid foam or pipe insulation between the shaved root and the new concrete surface to allow for callus.
4) Work on roots greater than 2" diameter requires Project Manager approval prior to commencement.
5) No root grinding or cutting is permitted within 4 feet from the face of the tree.

H) **Clean Root Cutting**:
1) Root cutting shall be a LAST RESORT option. Where tree root systems interfere with curb and gutter, drain tile, or other utilities, the Contractor may address roots as follows:
a) Cleanly cut tree roots as directed by the Project Manager.
b) Immediately and cleanly cut damaged and exposed roots back to sound, healthy tissue.
c) Immediately cover root ends exposed by excavation activities with 6 inches of topsoil (measured outward from cut ends).
d) No cutting of roots larger than 2" will be allowed unless approved by the Project Manager. No root cutting is permitted within 4 feet from the face of the tree.

I) **Measurement**:
1) Tree Root Preservation and Protection will be measured by the tree, regardless of TPZ size. Measurement is complete when excavations in the TPZ are completed.

J) **Payment**:
1) Payment for Tree Root Preservation and Protection Type 1 (each) shall be full compensation for all labor, equipment, and materials necessary to protect trees and roots as specified, including protective construction fencing for each tree.
2) All protection shall be inspected by the Project Manager prior to the start of construction.

K) **Schedule of Deductions**:
1) Should the Contractor cause damages to trees or private landscaping, the Project Manager will maintain a running account of damage fees throughout the project. Damage fees will be assessed against the Contractor in the last application for payment. The Project Manager's running damage account will be available to the Contractor for review upon request.
2) Damage to trees will be measured according to the following table.

SCHEDULE OF DAMAGES (PER TREE OR PRIVATE LANDSCAPING FEATURE)			
TYPE OF DAMAGE	**LEVEL OF DAMAGE**		
	LOW	**MODERATE**	**SEVERE**
Trees			
Above Ground			
Canopy			
Branches			
Less than 2 inches diameter	Each		
Greater than 2 inches and less than 4 inches diameter.		Each	
Greater than 4 inches diameter			Each
Trunk Stem Circumference Damage			
$200/sf bark loss			
Below Ground			
Root Zone			
Construction within TPZ			
Material storage	Each		
Equipment storage	Each		
Soil Compaction	Each		
Root Cutting or Grinding			
Unapproved grinding or damage to 2/3 or more of a root within 4 feet from the face of the tree.			Each
Unapproved grinding or damage to 2/3 or more of a root with a diameter of 2" or greater.			Each

3) Deductions from the amount due to the Contractor for the tree and private landscaping protection item will be calculated in accordance with the following table.

Level of Damage	**Damage Fee** [1]
Trees	
Low of all Types	$200
Moderate of all Types	$325
Severe of all Types	Greater of 100 times the diameter of the tree in inches expressed in dollars or $1000

L) **Damaged Vegetation Replacement**: Any trees, shrubs, or vegetation damaged by the Contractor shall be replaced in kind at no cost to the City.

SECTION 33 00 00 - UTILITIES

3.01 GENERAL UTILITY PLACEMENT

A) All materials and workmanship shall conform to the WISDOT Standard Specifications for Highway and Structure Construction and City of Superior Construction Specifications, except where modified in these Plans or Specifications.
B) The Contractor shall field locate existing utility lines to be connected to prior to commencing work. If a discrepancy exists between Plans and actual field conditions, the Contractor shall notify the Project Manager immediately.
C) All applicable provisions of existing utility easements will be adhered to by the Contractor.
D) The Contractor must maintain minimum vertical and horizontal clearances from existing utilities at all times and avoid crossing at highly acute angles. Potholing is required prior to crossing any City-owned utility.

3.02 UTILITIES ALONG PAVED ROADS

A) Utilities shall be installed per approved permits and drawings, and with respect to existing utilities and locates.
B) Utilities shall not cut or disturb any drainage tiles. The Contractor must bore under tile lines a minimum of thirty-six (36) inches.
C) All paved roads shall have the utilities bored for crossings.
D) All construction site restoration shall conform to City and WISDOT standards.
E) Utilities should cross the road at a 90° angle. (Reference WISDOT HMM 09-15-25 Location Requirements).

3.03 UTILITIES ALONG GRAVEL ROADS, AND NEAR BRIDGES & CULVERTS

A) Utilities shall be installed per approved permits and drawings, and with respect to existing utilities and locates.
B) Utilities shall not cut or disturb any drainage tiles, culverts, or bridges. The Contractor must bore under tile and culvert a minimum of thirty-six (36) inches.
C) Utilities may be installed around a culvert or bridge with a minimum of 15 feet maintained from all sides of the structure.
D) All construction site restoration shall conform to City and WISDOT standards.
E) Utilities should cross the road at a 90° angle. (Reference WISDOT HMM 09-15-25 Location Requirements).

3.04 CONDUIT

A) The fiber optic conduit network shall be maintained at a constant horizontal and vertical location as shown in the roadway cross-sections of the Plans. (Reference WISDOT HMM 09-15-25 Location Requirements).
B) If constant horizontal and vertical locations cannot be maintained due to existing utilities or obstacles, conduit shall maintain a minimum depth of 36 inches, maintain distances based on existing utilities identified via Contractor locates, and adhere to approved permits.
C) Conduit runs shall not exceed 180° of bends or manufacturer recommendations between manholes or junction boxes.
D) Conduit entering a proposed fiber optic handhole/pull box/vault shall not exceed 45-degree entry angle or manufacturer recommendations.
E) The Contractor shall install maximum laying lengths of conduit, eliminating connections or joints between conduit runs. Prior Project Manager approval is required for any connections joined with electrofusion coupling or other manufacturer-recommended methods.
F) If damage occurs to conduit, the Contractor shall replace the entire length between corresponding junction boxes or enclosures.
G) If open trench installation is used, early protection warning tape shall be placed 12 inches above conduit.

H) All HDPE conduit shall be smooth outside, with a rating of SDR-11 or thicker. All PVC conduit shall be Schedule 40 or thicker.

3.05 HANDHOLES/PULL BOXES/VAULTS

A) Approximate locations of handholes/pull boxes/vaults are shown in the Plans. The number of handholes/pull boxes/vaults required may vary.

B) Handholes/pull boxes/vaults and lids shall have a minimum ANSI/SCTE 77-2017 Tier 15 designation for handholes/pull boxes/vaults placed in grass or non-paved areas and for sidewalk applications.

C) **Grade Requirements**: Heavier grade handholes/pull boxes/vaults, as specified on the Plans, shall be installed at locations indicated, predominantly in alleyways or other areas subject to increased vehicular loading. The Contractor shall verify specific grade requirements per Plan callouts.

D) **Location Deviations**: While the primary design specifies handhole/pull box/vault installation between the sidewalk and the roadway, the Contractor shall identify and notify the Project Manager immediately if site conditions present significant challenges to this placement. Such conditions include, but are not limited to:
   1) Steep ditches between the sidewalk and roadway that would render installation or future maintenance of the handhole/pull box/vault or its contained equipment exceedingly difficult or unsafe.
   2) The presence of existing utilities, such as gas lines, directly beneath the sidewalk that would necessitate sidewalk replacement for installation of a drop connection to a serving premise. The Owner reserves the right to review each such case individually and grant written approval for alternative handhole/pull box/vault placement, such as on the opposite side of the sidewalk, at the Project Manager's sole discretion.
   3) If proposed handhole/pull box/vault placement would place the handhole/pull box/vault in a swale or other drainage way, contact the Project Manager to review location prior to placing conduit to that location to allow them to determine if the handhole/pull box/vault location will be adjusted to an alternate location.

E) All handhole/pull box/vault installations shall be backfilled in layers not more than six (6) inches in loose thickness. The base layer shall consist of 3/4" gravel, with layers of 1/4" or lower "crush and run" gravel material above. Each layer shall be thoroughly compacted before the next layer is placed. (Refer to WISDOT 625.2 and 651.3.1).

3.06 FIBER OPTIC CABLE

A) Fiber optic cable (fiber) installation techniques and procedures shall be as specified by the cable manufacturer and shall ensure optical and mechanical characteristics are not degraded.

B) The central strength member and aramid yarn shall be attached directly to the pulling eye during fiber pulling. "Basket grip" or "pulling sock" type attachments to the fiber outer tensile rating shall be used on all pulls.

C) All installation procedures shall be in accordance with manufacturer recommendations and industry standards.

D) The Contractor shall coordinate with the Project Manager prior to disconnecting any existing fibers and for all fiber splicing at Owner sites.

E) Only in certain circumstances, and with written approval and adherence to separation guidelines from the Owner, shall energized cable be placed in the same conduit or handhole/pull box/vault as fiber.

F) Fiber count is specified on the Plans. Single mode all dielectric fiber shall be used. Fiber grounding is required for armored fiber. Fiber tails from patch panels, cabinets, and POP-sites shall be dielectric.

G) Once fiber is installed into splice enclosures, follow manufacturer recommendations for proper enclosure seal.

H) Place additional splicing trays as necessary. Only three (3) fiber drops per tray is acceptable.

I) Provide fifty (50) feet of spare fiber for inline and end-of-line closure installs for the distribution network. If a closure serves a branch/lateral, provide one hundred (100) feet of spare fiber for the mainline cable and fifty (50) feet of spare fiber for the lateral cable being spliced to the mainline.

J) Fiber shall be stored with snowshoe style units, consistent with aerial fiber construction figures.

K) Conventional construction methods must be followed when pulling fiber in underground conduits, consistent with standard telecommunication industry practices.

L) Testing, ventilating, pumping, and setting up handholes/pull boxes/vaults and conduit for fiber pulling operations are the same as for copper cable.

M) A pulling sock/basket grip shall be attached to the outside of the fiber end for fiber pulling. Additionally, fiber strength members can be attached to the pulling eye if required by the Project Manager.

N) Maximum pulling tensions shall not exceed 600 LBS or the manufacturer specified amount if less than 600 LBS. A tension meter or tension limiter shall be used.

O) A swivel shall be used between the pulling line and pulling feature to relieve rope twist.

P) Fiber shall not be subjected to a dynamic bending radius outside of manufacturer specifications during pull. Final static bending radius shall be within the manufacturer specifications.

Q) Fiber shall be secured with tie wraps to prevent interference with future fiber installations.

R) Identify all circuits, fiber, and equipment with approved ID tags.

S) The tone wire shall be connected continuously through each handhole/pull box/vault with a copper split bolt for continuity testing and splicing. The tone wire shall have a minimum of five (5) feet spare in each handhole/pull box/vault. (Reference WISDOT 655 Electrical Wiring).

T) **Grounding for Armored Fiber**: If utilizing armored fiber, ground rods shall be installed as called out on the Plans. Ground rods are required in all handholes/pull boxes/vaults containing an armored fiber splice case. Additionally, ground rods shall be installed in handholes/pull boxes/vaults along armored fiber runs such that ground rods are placed at a maximum spacing of two thousand (2,000) feet. Each armored fiber and its splice case within these handholes/pull boxes/vaults shall be directly connected to the installed ground rod. All dead-end handholes/pull boxes/vaults and handholes/pull boxes/vaults with more than two paths that contain armored fiber optic cable or splice cases shall also have a ground rod installed.

U) Ground rods shall be 8 ft x 5/8" all copper rods and placed at the bottom of the handhole/pull box/vault or per manufacturer direction.

V) Ground rods shall have a bonding clamp installed with a minimum of fifteen (15) feet of 12 AWG tone wire connected. The tone wire from the ground rod is not to be connected to the continuous tone wire except at dead end handholes/pull boxes/vaults. (WISDOT 655 Electrical Wiring).

W) Upon completion, the Contractor shall demonstrate that the wire is continuous and unbroken through the entire run of conduit by providing full signal conductivity (including splices). If broken, the Contractor shall repair or replace it.

X) If Owner authorities require, raised markers indicating fiber buried below shall be installed, subject to the following location requirements. These markers shall only be installed in rural areas, typically defined as locations along open ditches or undeveloped public rights-of-way. Markers shall not be installed in developed residential or commercial areas, typically characterized by curb, gutter, and sidewalks. In designated rural areas, markers shall be installed at intervals not to exceed 2,000 feet. A raised marker shall also be installed at all dead-end vaults and at vaults with more than two paths.

3.07 PASSIVE CABINETS

A) Passive cabinets shall be mounted to concrete pads with an adjacent handhole/pull box/vault placed for splicing.

B) Follow manufacturer directions for installing and mounting handholes/pull boxes/vaults.

C) Handholes/pull boxes/vaults for passive cabinets shall follow the same typical for all other handholes/pull boxes/vaults.

D) Passive cabinets shall be labeled according to Owner specifications.

3.08 AERIAL CONSTRUCTION

A) All pole attachments shall follow regional communication pole attachment standards.
B) Aerial installation of fiber shall use the same tools, equipment, material, and procedures as copper cable.
C) Fiber shall be lashed on a separate messenger strand or an existing messenger strand with communication cable already lashed to it. Messenger strand will be installed by the Contractor when directed by the Project Plans.
D) The installation of aerial fiber may be performed by either the back-pull or drive-off method. The method used must be discussed and approved by the Project Manager for each project phase.
    1) **Back-Pull Method**: Requires pulling the entire fiber into position while temporarily securing it to the messenger strand with hangers (approximately every fifty (50) feet, with closer spacing over roadways, driveways, railroads, etc., for proper clearance).
    2) **Drive-Off Method**: Involves lashing the fiber in sections along the route. The fiber is driven past the first span and lashed, repeating until the route end.
E) During lashing, an aerial fiber guide shall be used to protect the fiber from harmful bend radius.
F) Fiber markers/tags, supplied by the Owner, shall be placed on the fiber at each pole.

SECTION 33 60 00 - COMMUNICATIONS SYSTEM TESTING

3.01 FIBER OPTIC CABLE TESTING

A) All fiber optic cables (fiber) shall be tested via OTDR after splicing is complete. The Contractor shall notify the Project Manager 48 hours prior to OTDR Testing. Testing shall be done in the presence of the Project Manager or their representative unless approved by the Project Manager.
B) Acceptance testing shall be done by the Contractor using OTDR testing, both single and bi-directional, depending on application.
C) dB losses and tolerances shall be determined by the Owner. Testing results shall be reviewed by the Project Manager.
    1) **Singlemode**: 1310nm and 1550nm
        a) MAX. IND. FIBER LOSS AT 1310 NM: 0.35 DB/KM
        b) MAX. IND. FIBER LOSS AT 1550 NM: 0.25 DB/KM
D) The Contractor shall summarize the results of both the OTDR and Optical Source/Power Meter tests in spreadsheet/tabular format adhering to the following requirements:
    1) List fiber size, start point, end point.
    2) List all fibers by number and direction (NB, SB, EB, WB).
    3) List total fiber length for each fiber as documented by OTDR.
    4) List attenuation in dB of gain/loss for each fiber event in the OTDR.
    5) List fiber loss event descriptions & locations, including splices, miscellaneous events, & terminations.
    6) List the attenuation across the fiber in dB/KM for each fiber tested.
    7) List the total segment loss for each fiber as determined by the Optical Source/Power Meter Test.
    8) Provide bi-directional data, including event distances, event descriptions, and attenuation losses for each fiber corresponding to a common start point.
    9) Provide bi-directional data on separate lines, side-by-side within the same sheet.
    10) Provide 1310 NM and 1550 NM test results on separate sheets in identical formats.
E) Splice results shall be supplied to the Project Manager by the Contractor for Owner approval.
F) Fusion welding method will be utilized on all permanent splices, single and mass fusion (ribbon cable). Average optic loss to be determined via OTDR testing.
G) Reference WISDOT 678.3.4 Communication System Testing for more information.

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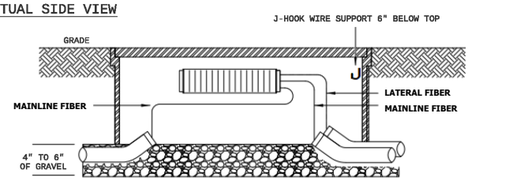
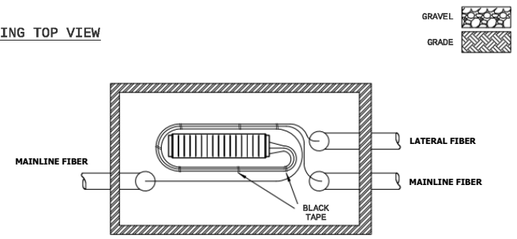
SPLICE CLOSURE DETAIL

CONCEPTUAL SIDE VIEW



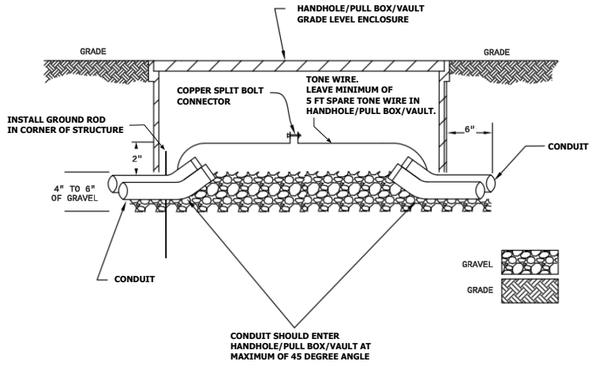
ROUTING TOP VIEW



NOTES:

1. FOR MAINLINE FIBER, LEAVE 100 FT OF SPARE FIBER (SLACK) (50 FT ON EACH SIDE OF CLOSURE) FROM CONDUIT TO CONDUIT. FOR LATERAL FIBER OR BUTT SPLICES, LEAVE 50 FT OF SPARE FIBER (SLACK) FROM END OF CONDUIT. ROUTE LATERAL AND DROP CABLES TOGETHER FROM CONDUIT TO CLOSURES. DO NOT EXCEED MANUFACTURER SPECIFICATIONS FOR FIBER BEND RADIUS. CONDUITS MUST NOT EXTEND MORE THAN 2" ABOVE GRAVEL.
2. J-HOOK WIRE SUPPORTS SHALL BE SECURELY ATTACHED TO THE HANDHOLE/PULL BOX/VAULT WITH A BOLT AND NUT WITH A NEOPRENE WASHER OR AN EXPANSION FITTING. ONE J-HOOK PER WALL SHALL BE INSTALLED FOR ALL HANDHOLES/PULL BOXES/VAULTS WITH CLOSURES.
3. BUTT SPLICES FOR REEL ENDS ARE NOT DESIGNATED ON THE MAP. HANDHOLES/PULL BOXES/VAULTS WITH REEL ENDS SHALL BE DESIGNATED ON THE AS-BUILTS.
4. IF FIBER IS ARMORED, GROUNDING MUST BE INSTALLED AS OUTLINED IN SPECIFICATIONS SECTION 33 00 00 3.06T.

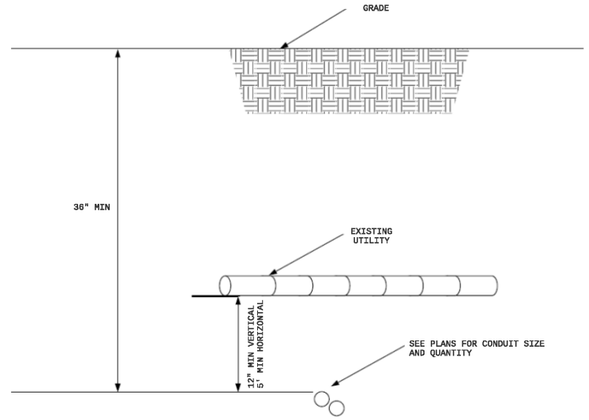
HANDHOLE/PULL BOX/VAULT



NOTES:

1. EXCAVATE HANDHOLE/PULL BOX/VAULT 4" - 6" DEEPER THAN THE DEPTH OF THE HANDHOLE/PULL BOX/VAULT.
2. THE 4" TO 6" OF GRAVEL SHALL BE PLACED IN HOLE.
3. THE HANDHOLE/PULL BOX/VAULT SHALL BE PLACED IN HOLE WITH TOP AT GRADE LEVEL.
4. THE HOLE SURROUNDING HANDHOLE/PULL BOX/VAULT SHALL BE FILLED AND COMPACTED AT GRADE LEVEL.

UTILITY CROSSING

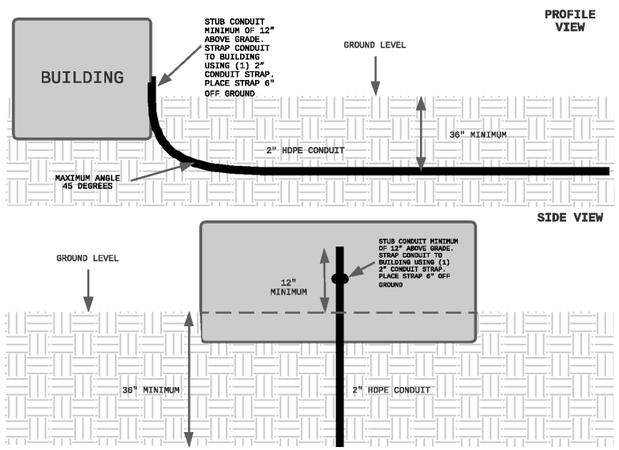


NOTES:

1. MAINTAIN 5' HORIZONTAL SEPARATION FROM ALL UTILITIES
2. MAINTAIN 12" VERTICAL SEPARATION FROM ALL UTILITIES

IF HORIZONTAL SEPARATION IS NOT POSSIBLE BORE 12" BELOW UTILITY AND MAINTAIN 12" VERTICAL SEPARATION.

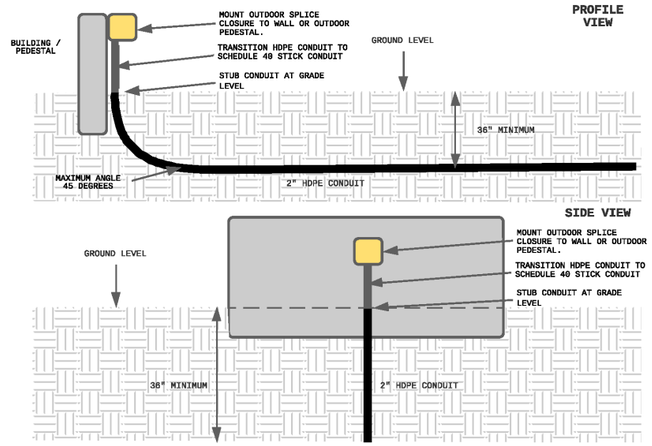
BUILDING ENTRANCE



NOTES:

1. COORDINATION WITH THE PROJECT MANAGER SHOULD BE MADE BEFORE CONDUIT IS RAN TO ANY FACILITY. EXTERIOR BUILDING CONDUIT, HANDHOLES/PULL BOXES/VAULTS, CORE DRILLS, AND FIBER PULL LENGTH ARE DEPENDENT ON EACH FACILITY.

OUTDOOR WALL/PEDESTAL CLOSURE



NOTES:

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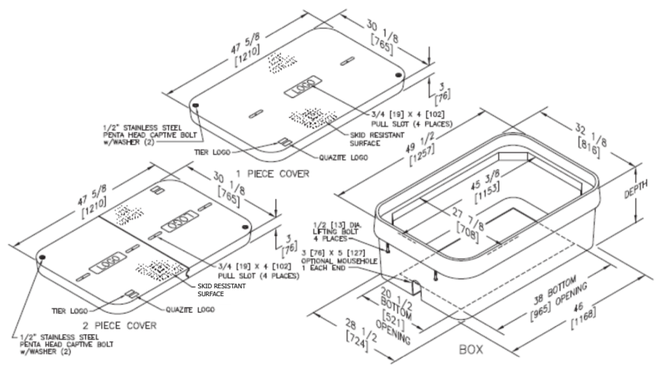
HANDHOLE/PULL BOX/VAULT LID



NOTES:

1. HANDHOLES/PULL BOXES/VAULTS AND LIDS SHALL HAVE A MINIMUM ANSI/SCTE 77-2017 TIER 15 DESIGNATION FOR HANDHOLES/PULL BOXES/VAULTS PLACED IN GRASS, SIDEWALKS, OR NON-PAVED AREAS.
2. HANDHOLES/PULL BOXES/VAULTS SHALL BE POLYMER CONCRETE WITH STRAIGHT SIDE OR POLYMER CONCRETE WITH FLARED OR STRAIGHT FIBERGLASS SIDES.
3. GROUND RODS SHALL BE 8' X 5/8" ALL COPPER RODS AND PLACED AT THE BOTTOM OF THE HANDHOLE/PULL BOX/VAULT OR PER MANUFACTURER DIRECTION.
4. GROUND RODS SHALL HAVE A BONDING CLAMP INSTALLED WITH A MINIMUM OF 15 FT OF 12 AWG TONE WIRE CONNECTED TO THE BONDING CLAMP. THE TONE WIRE FROM THE GROUND ROD IS NOT TO BE CONNECTED TO THE CONTINUOUS TONE WIRE EXCEPT AT DEAD END HANDHOLES/PULL BOXES/VAULTS.
5. REFER TO SECTION 33 00 00 3.06 IN THE SPECIFICATIONS FOR DETAILS ON GROUNDING.
6. GROUND ROD INSTALL TO FOLLOW HANDHOLE/PULL BOX/VAULT MANUFACTURERS SPECIFICATIONS.
7. ALL LIDS SHALL HAVE THE 'CONNECT SUPERIOR' LOGO

FDA TYPICALS

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N W E S

1. UTILITY AND ROW LINES ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE EXACT LOCATIONS PRIOR TO CONSTRUCTION.
2. ALL UNDERGROUND CABLE SHALL BE PLACED AT A MINIMUM DEPTH OF 36" BELOW THE SURFACE UNLESS OTHERWISE NOTED.
3. BOREPITS MAY BE MOVED BASED ON FIELD REVIEWS. THE FINAL AS-BUILT DRAWINGS WILL REFLECT THE FINAL BORE PIT LOCATIONS.

PROJECT NO.	TEL. CO.	EXCHANGE

HANDHOLE/PULL BOX/VAULT LID LOGO

Approval Signature: Stephanie Becker

Name (Please Print): Stephanie Becker

Date: 8/2/2024

CHANNELL

26040 YNEZ ROAD TEMECULA, CALIFORNIA 92590 TELEPHONE (909) 694-9160 FAX (909) 694-9170

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DECIMAL FRAC. ANGLE	DWN. PA	08/24		
.XX .XXX	CKD.			
	RELEASE TO PROD.			
SHEET NO.	SCALE		PROJECT NO. DRW. NO.	REV.
NO. OF SHTS.	UNITS:			

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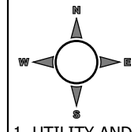

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PROJECT NO.

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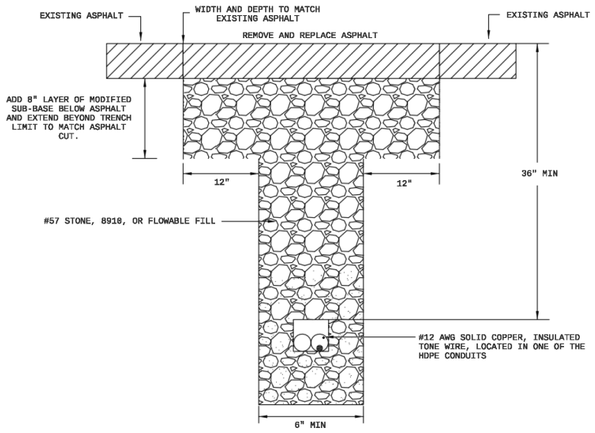
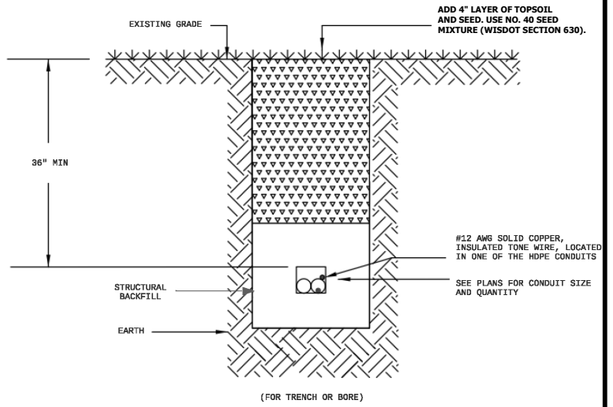
PAVEMENT CUT



NOTES:

1. THE BOTTOM OF THE TRENCH SHALL BE LEVEL.
2. EXCAVATED MATERIAL MAY BE DEEMED SUITABLE BACKFILL BY AN ENGINEER OR INSPECTOR. FURTHER BACKFILL LAYERS TO MATCH EXISTING SECTION ABOVE.
3. 1.5" MINIMUM TOP LIFT OF SM ASPHALT REQUIRED.
4. IF OPEN TRENCH INSTALLATION IS USED, EARLY PROTECTION WARNING TAPE SHALL BE PLACED 12 INCHES ABOVE BURIED CONDUIT.

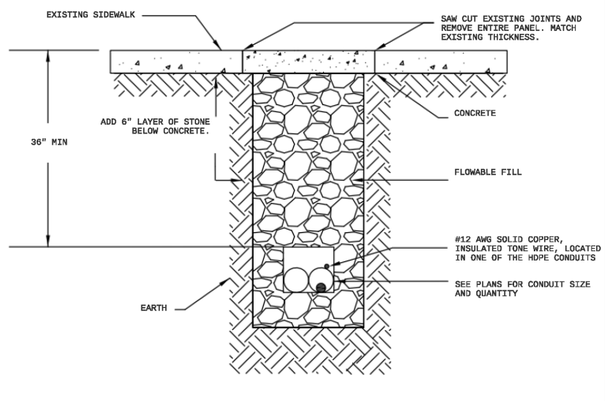
RESTORATION



NOTES:

1. SEE SPECIFICATIONS SECTION 31 00 00 3.01 AND 3.02 FOR MORE DETAIL ON BACKFILL AND RESTORATION REQUIREMENTS.
2. BASE LAYER TO BE STRUCTURAL BACKFILL (CMM 325 & WISDOT 209.1) AND EIGHT (8) INCHES OF 1 1/4" BAD (WISDOT 305) COMPACTED.
3. THE BOTTOM OF THE TRENCH SHALL BE LEVEL.
4. IF OPEN TRENCH INSTALLATION IS USED, EARLY PROTECTION WARNING TAPE SHALL BE PLACED 12 INCHES ABOVE BURIED CONDUIT.

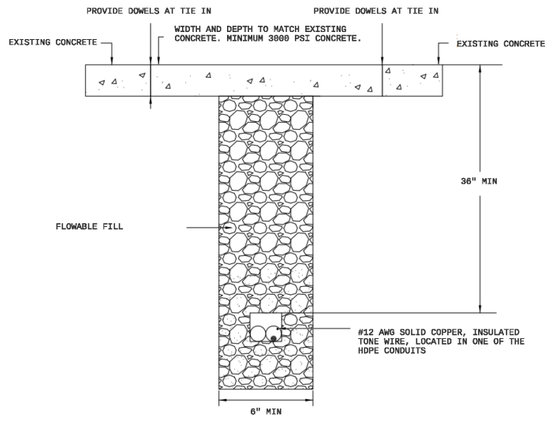
SIDEWALK CUT



NOTES:

1. SAW CUT SIDEWALK EDGES ALONG EXISTING JOINTS.
2. REMOVE ENTIRE SIDEWALK PANEL, JOINT TO JOINT.
3. THE NEW CONCRETE SIDEWALK SHALL BE PLACED LEVEL AND FLAT TO MATCH EXISTING.
4. THE FINISH SHALL MATCH EXISTING SIDEWALK.
5. BOTTOM OF TRENCH SHALL BE LEVEL.
6. IF OPEN TRENCH INSTALLATION IS USED, EARLY PROTECTION WARNING TAPE SHALL BE PLACED 12 INCHES ABOVE BURIED CONDUIT.

CONCRETE CUT



NOTES:

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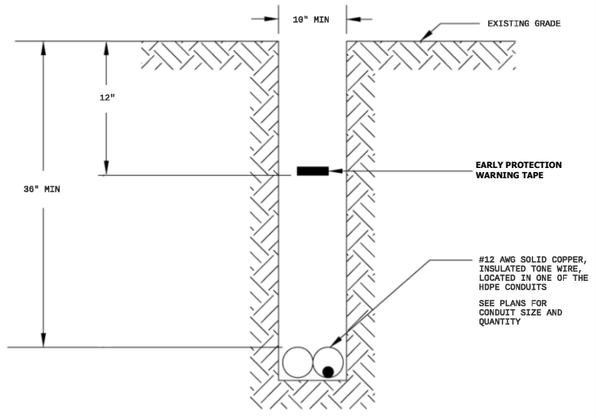
2. IF OPEN TRENCH INSTALLATION IS USED, EARLY PROTECTION WARNING TAPE SHALL BE PLACED 12 INCHES ABOVE BURIED CONDUIT.

OPEN TRENCH CROSS SECTION



NOTES:

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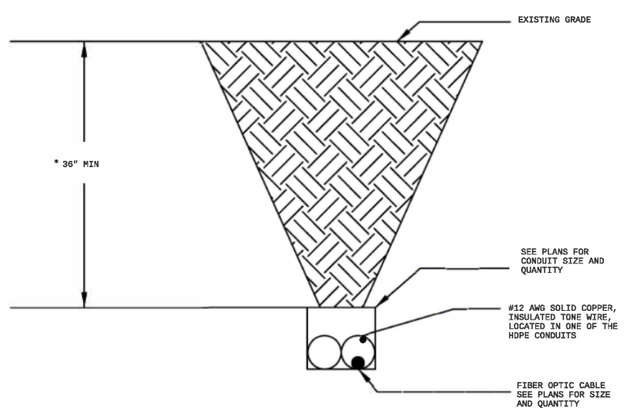
DIRECTIONAL BORE CROSS SECTION



*INCREASE DEPTH TO 48" IF BORING THROUGH A TPZ.

FDA TYPICALS

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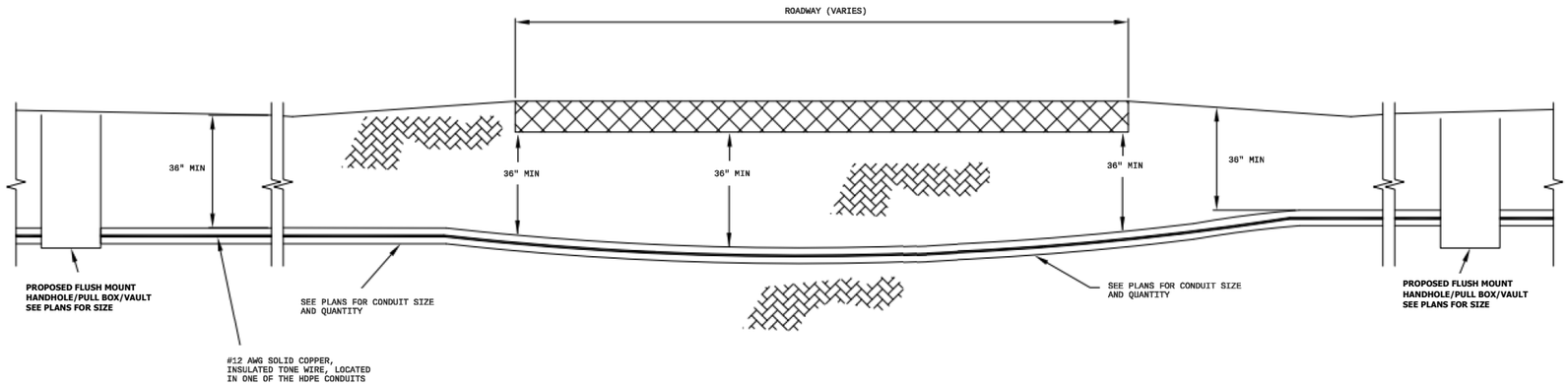
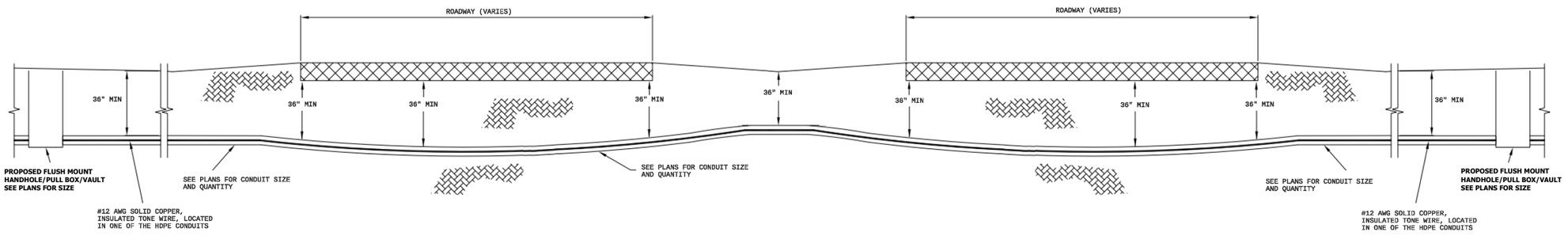
3. BOREPITS MAY BE MOVED BASED ON FIELD REVIEWS. THE FINAL AS-BUILT DRAWINGS WILL REFLECT THE FINAL BORE PIT LOCATIONS.

PROJECT NO. | TEL. CO. | EXCHANGE

ROAD CROSSING



DIVIDED ROAD CROSSING



FDA TYPICALS

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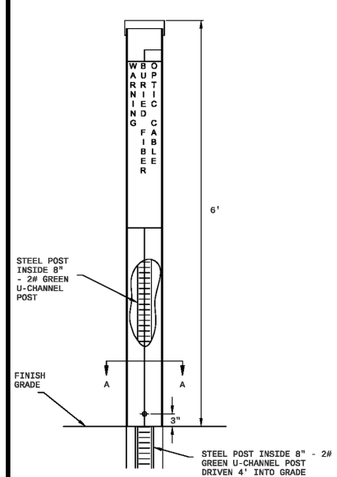
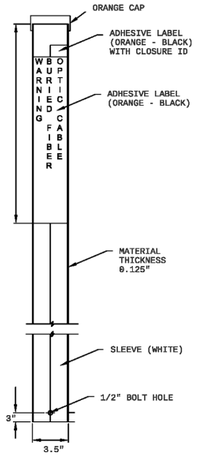
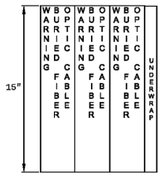
PROJECT NO. | TEL. CO. | EXCHANGE

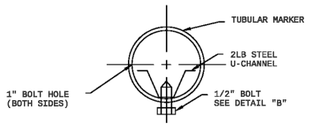
FIBER OPTIC UTILITY MARKER



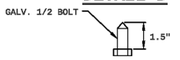




DETAIL A



DETAIL B



NOTES:

1. 8' - 2#/FT. GREEN STEEL U-CHANNEL POST OR CITY OF SUPERIOR APPROVED EQUAL.

2. 72" H-41-RF TUBULAR ROUTER MARKER OR CITY OF SUPERIOR EQUAL.

3. ROUTE MAKER WRAP DECAL, BLACK TEXT ON ORANGE BACKGROUND.

4. RAISED MARKERS INDICATING FIBER OPTIC CABLE BURIED BELOW SHALL BE INSTALLED WHERE INDICATED ON THE PLANS.

5. CONTRACTOR SHALL INDICATE WHERE MARKERS PLACED ON ALL REDLINE DRAWINGS

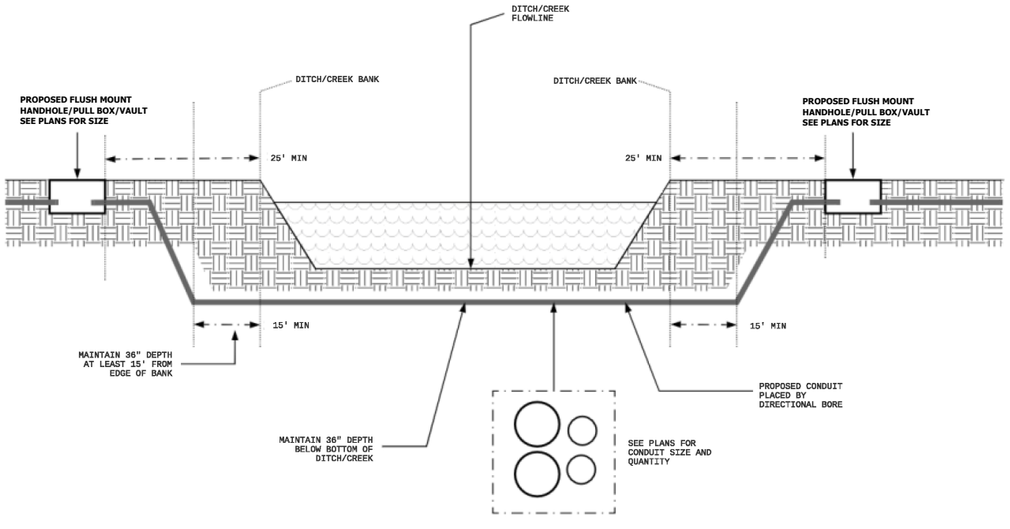
6. ALL RAISED MARKERS INSTALLED SHALL BE MARKED ON THE AS-BUILT DRAWINGS.

7. ALL FIBER OPTIC MARKERS SHALL HAVE "THE CITY OF SUPERIOR" MARKED ON THEM.

8. CABLE MARKERS SHALL ONLY BE PLACED ON RURAL FIBER INSTALLS UNLESS OTHERWISE SPECIFIED. USE WISDOT SPEC 671.3.3 FIBER OPTIC CABLE MARKER.

9. MARKERS SHALL BE PLACED NO MORE THAN 2,000' APART.

CREEK / DITCH CROSSING



NOTES:

1. REFER TO THE CONSTRUCTION NOTES FOR MORE DETAILS ON DITCH AND CREEK CROSSINGS.

2. IF CROSSING CULVERT VERIFY THERE IS 36" OF COVER. IF THERE IS 36" OF COVER CONDUIT MAY BE INSTALLED OVER CULVERT.

FDA TYPICALS

SHEET 5 OF 19

DATE

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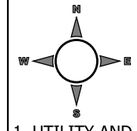

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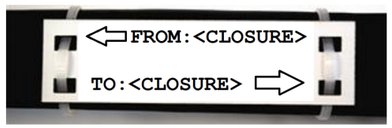
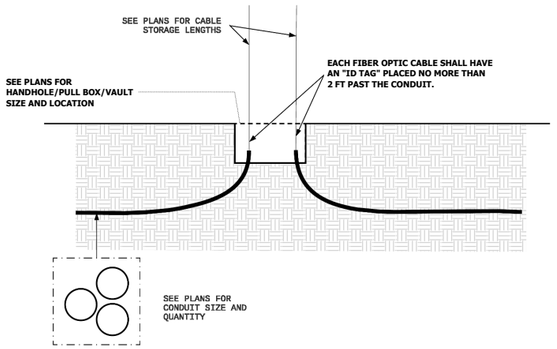
2. ALL UNDERGROUND CABLE SHALL BE PLACED AT A MINIMUM DEPTH OF 36" BELOW THE SURFACE UNLESS OTHERWISE NOTED.
3. BOREPITS MAY BE MOVED BASED ON FIELD REVIEWS. THE FINAL AS-BUILT DRAWINGS WILL REFLECT THE FINAL BORE PIT LOCATIONS.





CLOSURE LABELS 1

NOTES:

1. ID TAGS SHALL BE INSTALLED WHEN CABLE IS INSTALLED. THIS IS TO AID SPLICERS IN IDENTIFYING CABLES AND FUTURE MAINTENANCE ACTIVITIES.

2. ID TAGS ARE ONLY TO BE INSTALLED IN HANDHOLES/PULL BOXES/VAULTS WITH CLOSURES. PULL THROUGH HANDHOLES/PULL BOXES/VAULTS DO NOT REQUIRE ID TAGS.

3. ID TAGS SHALL BE FASTENED TO CABLES WITH A MINIMUM OF TWO ZIP TIES.

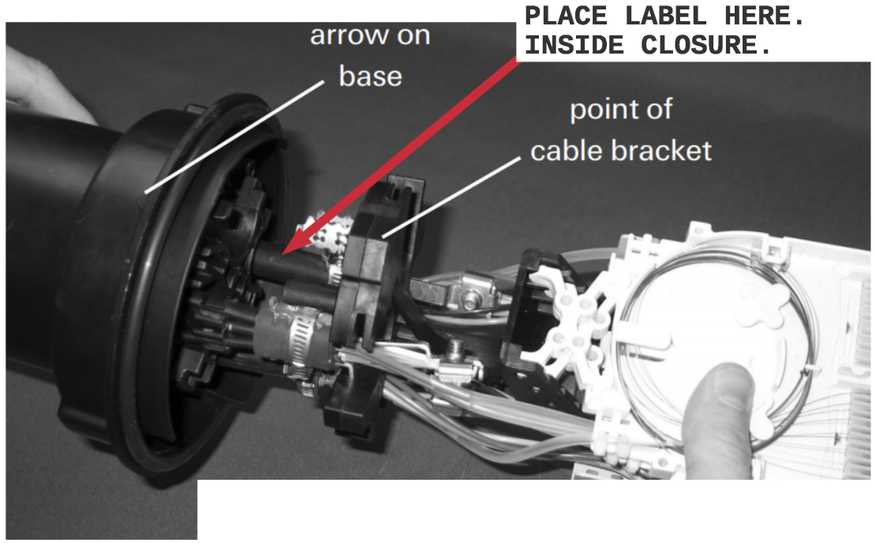
4. EXAMPLE ID TAG LABEL - "FEED, 48CT"

CLOSURE LABELS 2

NOTES:

1. EACH CABLE INSIDE CLOSURE SHALL BE LABELED WITH A STICK ON LABEL. THE LABEL SHALL BE COMPLETELY CONTAINED WITHIN THE CLOSURE. THE LABEL SHALL INDICATE WHICH CLOSURE THE CABLE IS GOING TO.

2. THE PICTURE SHOWN DISPLAYS A COMMSCOPE FOSC STYLE CLOSURE WITH THE LID REMOVED.



FDA TYPICALS
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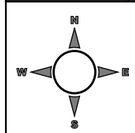

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EXAMPLE SPLICE CLOSURE EXTERIOR LABELS AND FIBERCABLE LABELS

EXAMPLE SPLICE CLOSURE INTERIOR LABELS, FIBER ASSIGNMENT TABLE FOR SPLICE TRAY

FDA	TYPICALS
SHEET	7 OF 19
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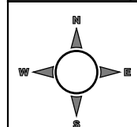

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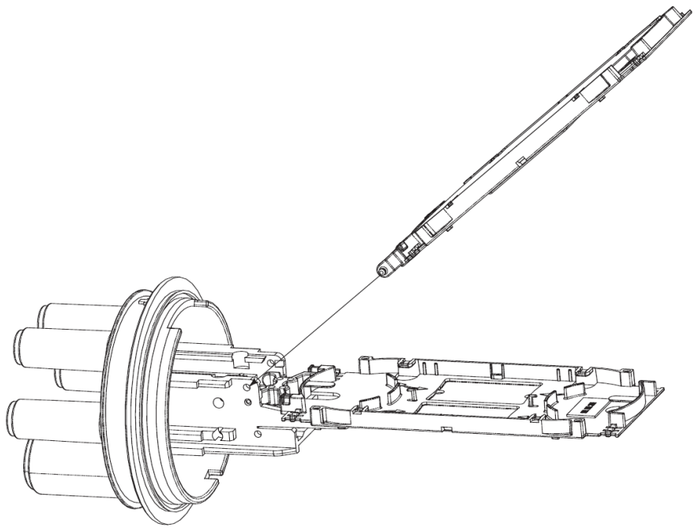
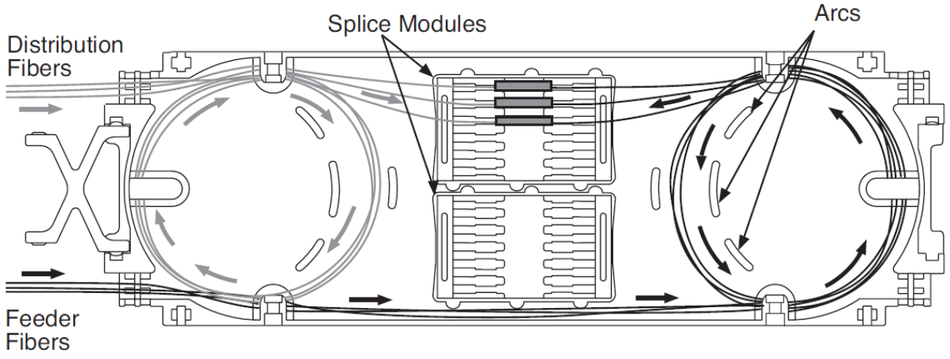
PROJECT NO. | TEL. CO. | EXCHANGE

SPLICE TRAY INSTALLATION

TRAY INSTALLATION IN CASE



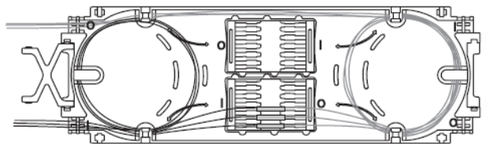
FIBER INSTALLATION IN TRAY



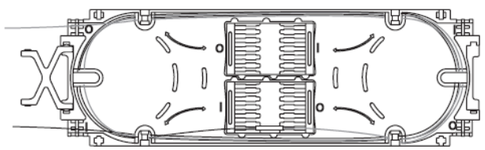
**Maximum 3 drops per tray*

FIBER ROUTING

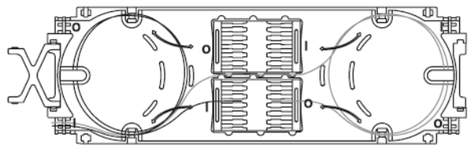
Correct Fiber Routing Patterns



End Storage Routing



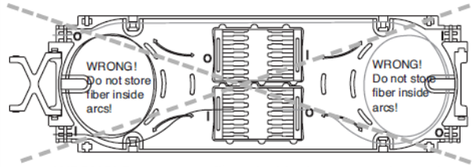
Perimeter Storage Routing



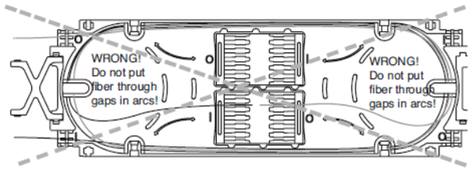
Crossover Routing (with End Storage)

Crossover Routing: Note that Feeder and Distribution fibers enter the tray at the same corner. This pattern is also required if fibers enter from diagonally opposite corners of the tray.

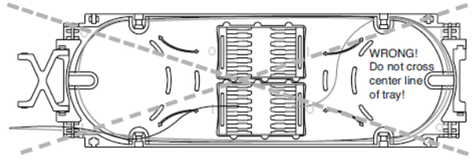
Incorrect Fiber Routing Patterns (Examples)



WRONG! Do not store fibers inside the arcs on the tray!



WRONG! Do not route the fibers through the arcs on the tray!



This pattern is wrong because the gray fiber incorrectly crosses the center of the tray to reach the lower splice module. The gray fiber should be routed via the "Crossover Routing" method as shown to the left to properly enter the lower splice module.

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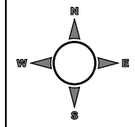

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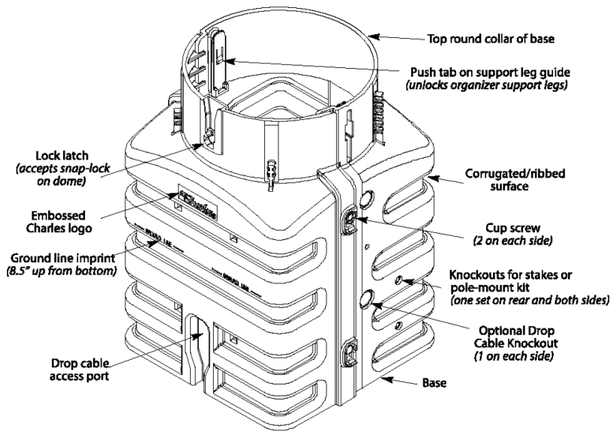
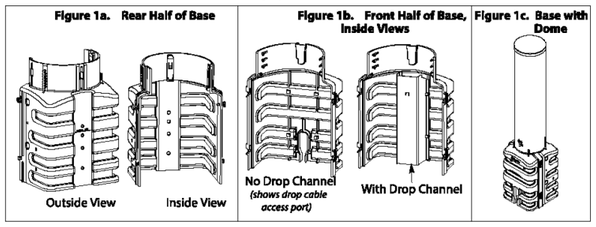
PROJECT NO. | TEL. CO. | EXCHANGE





PEDESTAL

THESE PEDESTAL PLANS REFER TO THE CHARLES INDUSTRIES BDO SERIES OF PEDESTALS. CONTRACTORS SHALL USE THE LATEST INSTALLATION PRACTICES FROM CHARLES INDUSTRIES. FURTHER INFORMATION MAY BE FOUND ONLINE AT THIS ADDRESS HTTPS://WWW.CHARLESINDUSTRIES.COM/SUPPORT/RESOURCES/PRACTICES-INSTALLATION-GUIDELINES/

IF ANOTHER PEDESTAL MODEL OR ANOTHER MANUFACTURER IS USED THE CONTRACTOR SHALL FOLLOW THE INSTALLATION INSTRUCTION PROVIDED BY THE MANUFACTURER.
CHARLES INDUSTRIES BDO PEDESTAL BASE INSTALLATION INSTRUCTIONS
PRODUCT PURPOSE

THE CHARLES PEDLOCK® PEDESTAL IS AN ABOVE-GRADE DEVICE THAT PROVIDES ENVIRONMENTAL PROTECTION FOR BURIED FEED AND DISTRIBUTION CABLES, AS WELL AS CUSTOMER SERVICE DROPS IN FIBER-TO-THE-HOME (FTTH) AND FIBER- TO-THE-PREMISES (FTTP) DEPLOYMENTS.
PRODUCT MOUNTING AND LOCATION

1. THE PEDESTAL BASE IS INSTALLED IN A TRENCH OR HOLE IN THE GROUND, UP TO THE GROUND LINE (GL) INDICATOR, AT THE FTTP OR FTTH DISTRIBUTION POINT. WHEN THE BASE IS INSTALLED, THE PEDESTAL IS EASILY SECURED WITH THE OVERLAPPING OUTERDOME. THE OUTERDOME IS SECURED TO THE BASE WITH A SELF-LOCKING LATCH.
2. PREPARE TRENCH. BE CAREFUL NOT TO DAMAGE ANY BURIED CABLES OR WIRES WHILE DIGGING. DIG AND PREPARE THE CABLE TRENCH, PER LOCAL COMPANY PRACTICES.
3. PLACE CABLES, CONDUIT OR INNERDUCT IN TRENCH. PLACE OR LAY CABLE/CONDUIT IN THE TRENCH PER LOCAL PRACTICE. IN THE FINAL POSITION, CONDUIT HEIGHT SHOULD BE 1.5 INCHES BELOW THE BOTTOM OF THE BASE COLLAR, BUT NO HIGHER THAN THE BOTTOM OF THE COLLAR. NOTE: THE MOST ACCURATE CUT CAN BE MADE AFTER THE BASE HAS BEEN SET TO ITS PROPER DEPTH.
4. ASSEMBLE THE BASE. IF THE CABLE LOOP OR TAIL CAN BE FIT THROUGH THE BASE COLLAR, THE TWO HALVES CAN BE ASSEMBLED PRIOR TO POSITIONING THE BASE. LIFT THE FRONT HALF OVER AND ONTO THE TWO LOCKING BOLTS AND THE TWO TABS. LEVEL BOTH HALVES AND LOCK THEM IN PLACE BY TIGHTENING THE TWO BASE BOLTS.
5. DETERMINE BASE INSTALLATION LOCATION. POSITION THE BASE IN THE APPROXIMATE DESIRED POSITION IN THE TRENCH. THE FRONT OR DROP SIDE OF THE BASE (CHARLES LOGO) GENERALLY FACES THE STREET. USING EITHER THE BACK HALF OF THE BASE OR THE ENTIRE ASSEMBLY, POSITION THE FEED CABLES/CONDUIT TOWARDS THE REAR OF THE BASE. NOTE: THIS POSITIONING FACILITATES THE ATTACHMENT OF CABLE(S) DURING SPLICING PROCEDURES.
6. POSITION AND LEVEL BASE IN TRENCH AND BEGIN BACKFILL. POSITION THE BASE AND. NOTE: MAINTAIN THIS LEVEL AS BACKFILL IS BEING ADDED AND TAMPED. ONCE THE CABLES/CONDUIT HAS BEEN POSITIONED, THE BASE CAN BE PLACED IN THE TRENCH (WITH THE OPTIONAL ATTACHED STAKE). AS THE TRENCH IS BACKFILLED, PERIODICALLY TAMP THE SOIL, ALWAYS PUSHING THE SOIL TOWARDS THE BASE. THIS PRACTICE HELPS TO REMOVE AIR FROM THE BACKFILL SOIL, MAKING SETTLING LESS LIKELY TO OCCUR. THE BASE IS DESIGNED TO MAINTAIN ITS ORIENTATION AFTER INSTALLATION; THEREFORE, IT IS IMPORTANT TO VERIFY THAT THE BASE IS LEVEL DURING THE ENTIRE INSTALLATION PROCEDURE. NOTE: SHOULD IT BE NECESSARY TO STRAIGHTEN A PEDESTAL AT ANY FUTURE TIME (SUCH AS IN THE EVENT OF UNEVEN GROUND SETTLING), NEVER ATTEMPT TO STRAIGHTEN AN INSTALLED PEDESTAL BY MANIPULATING, PUSHING, OR PULLING ON THE ATTACHED DOME, AS PEDESTAL DAMAGE MAY RESULT. TO RE-PLUMB AND STRAIGHTEN A PEDESTAL POST-INSTALLATION, FIRST REMOVE THE SOIL FROM AROUND THE BASE, THEN RE-ADJUST THE BASE UNTIL A PROPER LEVEL IS ACHIEVED.
7. INSTALL BACKFILL SOIL, MOISTURE BARRIER AND PEA GRAVEL. ALTERNATELY BACKFILL THE BASE, INSIDE AND OUTSIDE, TAMPING THE SOIL AS IT IS ADDED. THE SOIL ON THE INSIDE OF THE BASE SHOULD BE EVEN WITH THE TOP OF THE SECOND RIB FROM THE BOTTOM. ON THE OUTSIDE, THE BACKFILL SHOULD BE EVEN WITH OR ABOVE THE GROUND LINE. ADDING BACKFILL ONE RIB HIGHER, AND CLOSE TO THE CHARLES' LOGO, WILL MAKE THE BASE MORE STABLE. CAUTION: NEVER MOUND BACKFILL SOIL ON THE OUTSIDE OF THE BASE TO MAKE IT APPEAR THAT THE BASE HAS BEEN INSTALLED TO THE RECOMMENDED DEPTH, AS THIS MOUND WILL WASH AWAY.
8. WHEN THE INTERNAL BACKFILL IS AT THE PROPER HEIGHT, INSTALL THE RED MOISTURE BARRIER. PLUG ALL OPEN CONDUITS PRIOR TO POURING IN ANY PEA GRAVEL. POUR 5 TO 6 INCHES OF PEA GRAVEL INTO THE BASE. THE GRAVEL SHOULD BE NO HIGHER THAN THE UPPERMOST RIB. NOTE: IF THE CONDUIT HAS BEEN TRIMMED TO THE HEIGHT DESCRIBED IN STEP 3, THE GRAVEL WILL BE 1 TO 1.5 INCHES BELOW THE TOP OF THE DUCT.
9. INSTALL FIBER ORGANIZER. A KEY ON EACH LEG ALLOWS IT TO BE ORIENTED IN ONLY ONE DIRECTION. ALIGN THE LEGS ONTO THE TABS ON THE SIDES OF THE BASE COLLAR. PUSH DOWN UNTIL TWO AUDIBLE CLICKS ARE HEARD.
10. INSTALL DOME(S). NOTE: THE DOME CAN ONLY BE FULLY INSTALLED WHEN THERE IS NO CABLE IN THE WAY. CFDP-EPS PEDESTALS HAVE AN INNER (BLACK) DOME THAT FITS OVER THE ORGANIZER AND SNAPS ONTO THE TOP SNAP CLIP. POSITION THE OUTER DOME AND ALIGN THE LOCK WITH THE BASE LATCH.

RAILROAD, WATERWAY, BRIDGE, OR OTHER CROSSING

NOTES:

1. THESE PLANS DO NOT INCLUDE PLANS OR TYPICALS FOR RAILROAD, BRIDGE, OR WATER WAY CROSSINGS. SEPARATE DETAIL DRAWINGS FOR EACH CROSSING WILL BE INCLUDED IN THE PROJECT PLANS WITH APPROVED PERMITS ATTACHED. DO NOT CONSTRUCT ANY OF THESE AREAS WITHOUT THE PROPER APPROVAL AND PERMITS.

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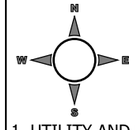

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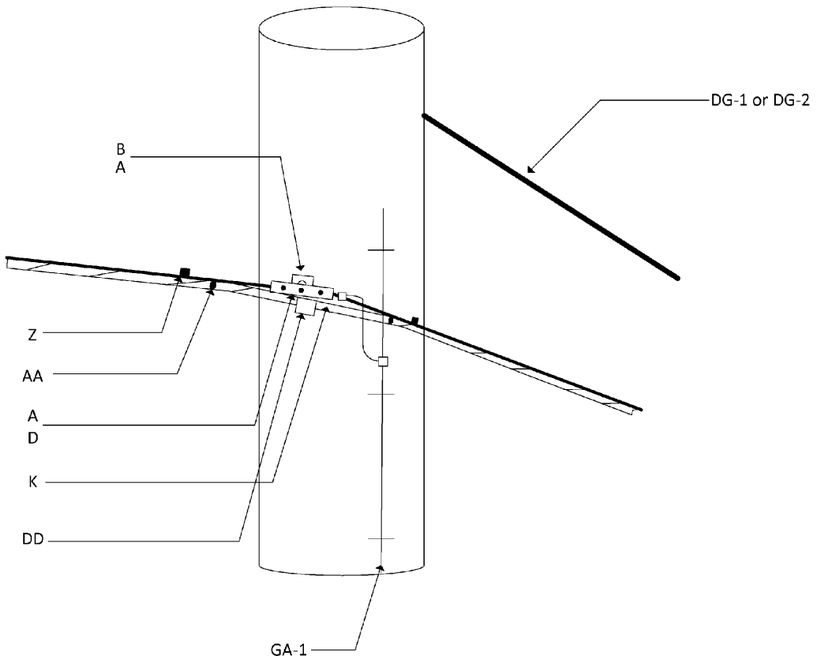
PROJECT NO. | TEL. CO. | EXCHANGE

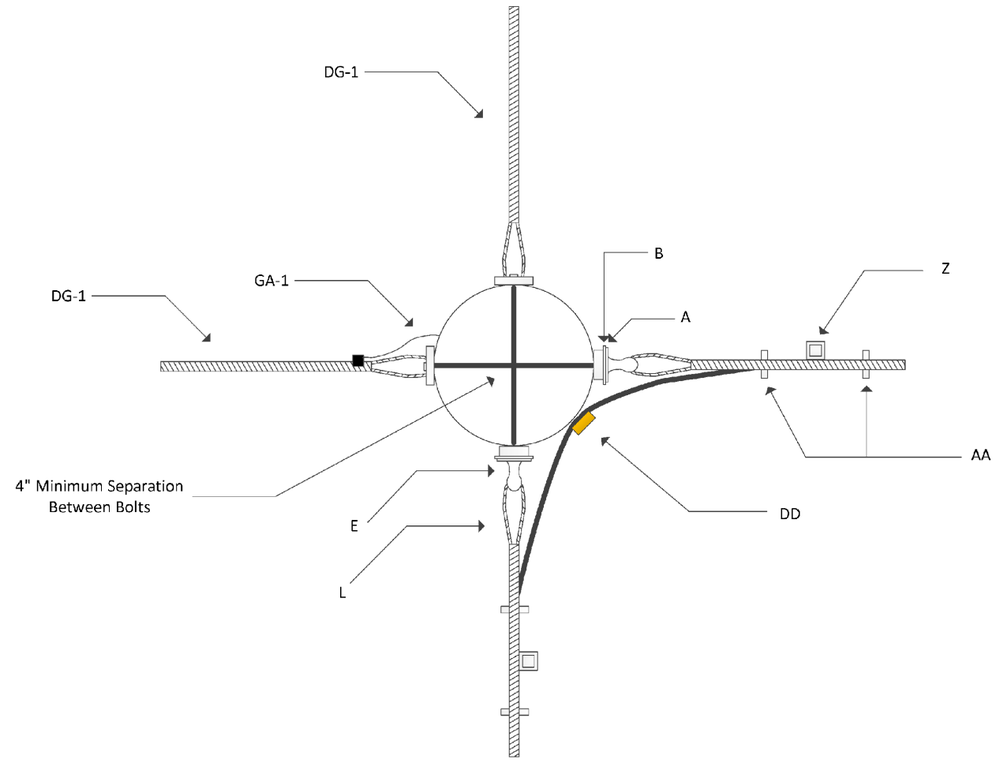
Curve Suspension Strand (CV-1)



CV-1 (Fiber)	Curve 1	
Item	Qty	Description
K	1	3 Bolt Curve Suspension Clamp
D	1	Machine Bolt (Various Length)
B	2	Square Washers
A	2	Square Nuts
Z	2	Lashing Wire Clamps
AA	2	Strap and Spacers
DD	1	Fiber Marker/Tag
DG-1	1	Down Guy Assembly
GA-1	1	Ground Assembly

USE CITY OF SUPERIOR STANDARDS
FOR SECONDARY POLE ATTACHMENTS

Double Dead End (DD-1)



DD-1	Double Dead End	
Item	Qty	Description
E	2	Eye Bolt
B	4	Square Washers
A	2	Square Nuts
DG-1	2	DG Assembly
AA	4	Strap and Spacers
DD	1	Fiber Marker/Tag
Z	2	Lashing Wire Clamps
L	2	Dead End Grips
GA-1	1	Ground Assembly

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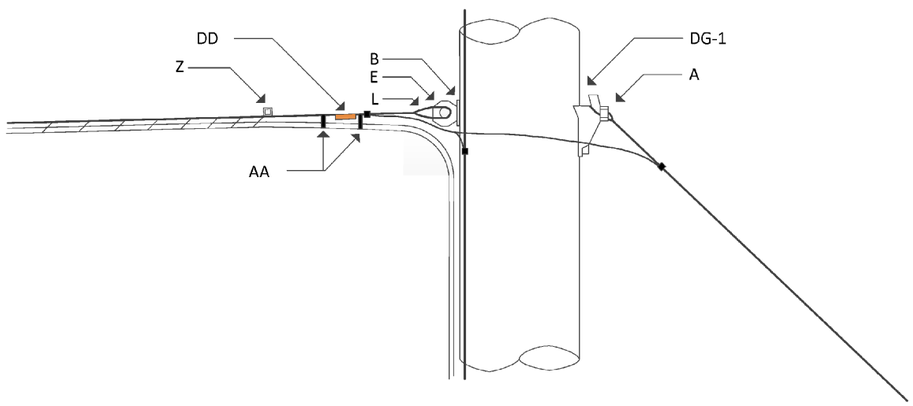
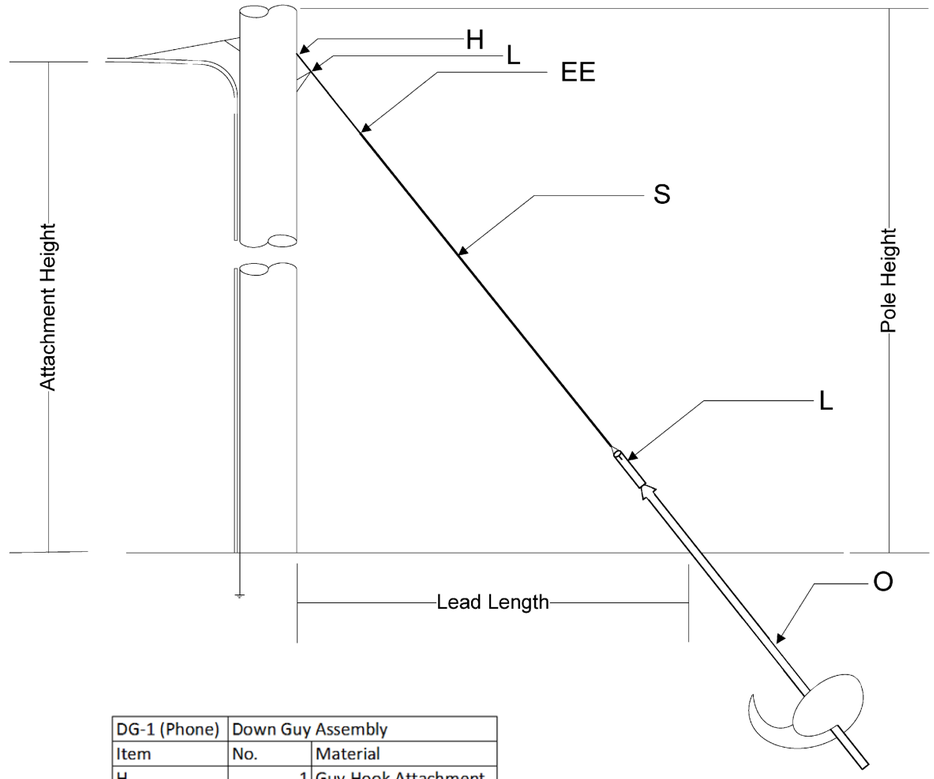
Dead End (DE-1)



DE-1	Dead End	
Item	Qty	Description
E	1	Eye Bolt
A	1	Square Nuts
DG-1	1	DG Assembly
AA	2	Strap and Spacers
L	1	Dead End Grips
DD	1	Fiber Marker/Tag
Z	1	Lashing Wire Clamps
B	1	Square Washer
GA-1	1	Ground Assembly

Anchor & Down Guy Detail (DG-1, DG-2)



DG-1 (Phone)	Down Guy Assembly	
Item	No.	Material
H	1	Guy Hook Attachment
EE	1	35' Strand
O	1	Anchor
S	1	Guy Guard
L	2	Dead End Grips

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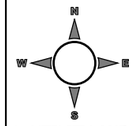

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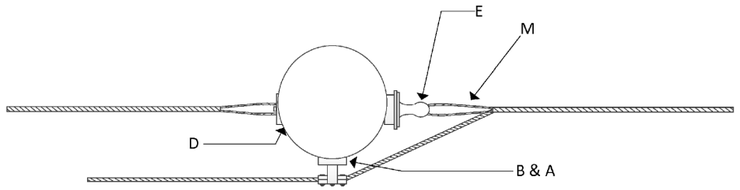
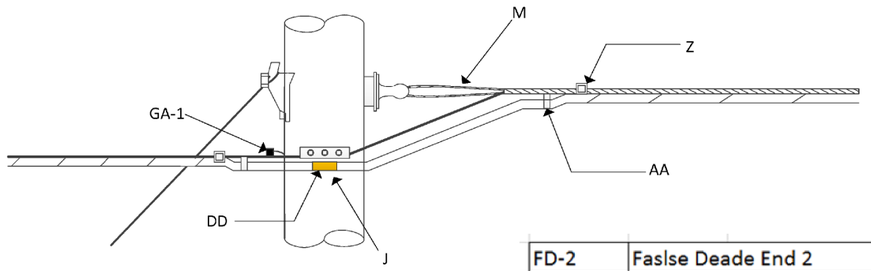
False Dead End (FD-2)





Washers

FD-2	Faslse Deade End 2	
Item	No.	Material
J	1	3 Bolt Staight Suspension Clamp
D	1	Machine Bolt (Various Lengths)
B	3	Square Washers
A	3	Square Nuts
Z	2	Lashing Wire Clamps
DD	1	Fiber Marker/Tag
AA	4	Strap and Spacers
E	1	Eye Bolt
DG-1	1	DG Assembly
M	1	False and Dead End Grips
GA-1	1	Ground Assembly

USE CITY SECONDARY STANDARDS FOR SECONDARY POLE ATTACHMENTS

FDA TYPICALS

SHEET 12 OF 19

DATE

MAP REF.

COUNTY:

TOWNSHIP:

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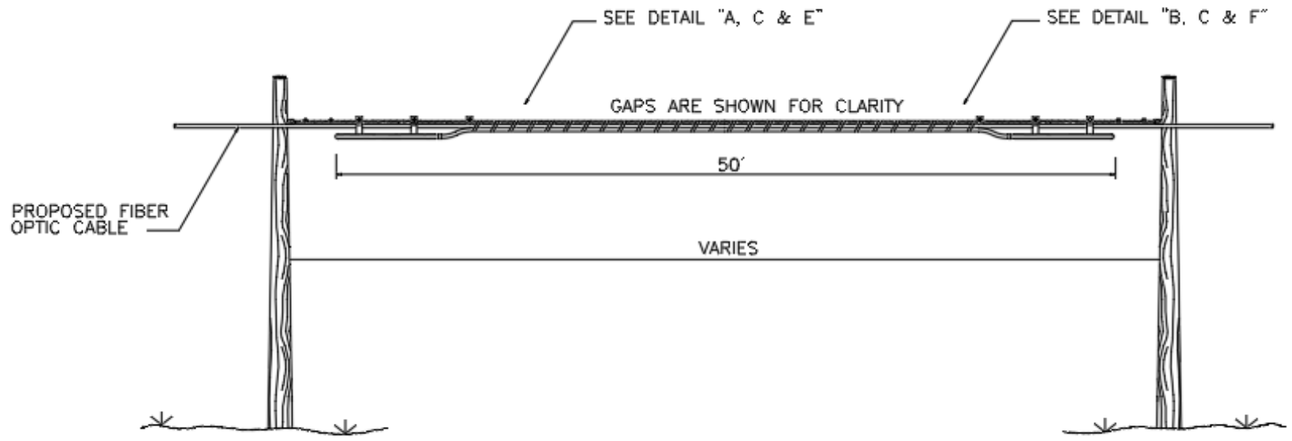
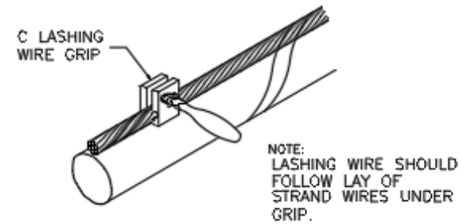
Excess Aerial Cable Slack Storage (Snow-Shoe)

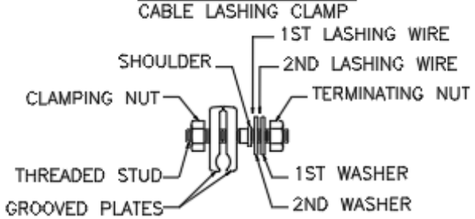
TYPICAL DETAIL FOR STORING CABLE SLACK



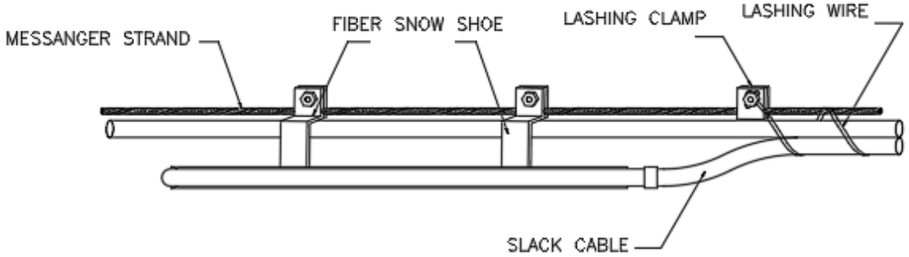
TYPICAL DETAIL – C
LASHING WIRE GRIP AND CLAMP
C LASHING WIRE GRIP INSTALLED ON STRAND



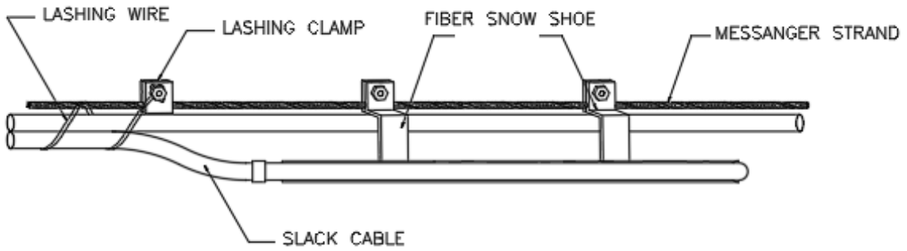
TYPICAL DETAIL – D
CABLE LASHING CLAMP

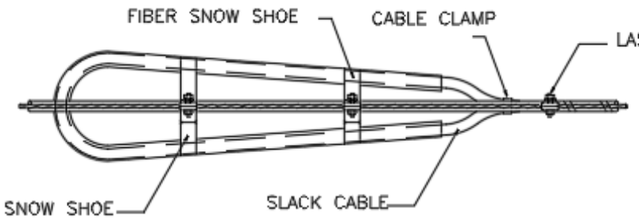


TYPICAL DETAIL – A



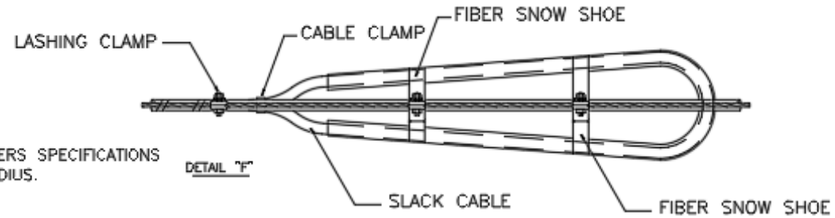
TYPICAL DETAIL – B





TYPICAL DETAIL – E

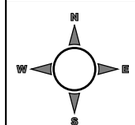
NOTE:
DO NOT EXCEED THE MANUFACTURERS SPECIFICATIONS CONCERNING MINIMUM BENDING RADIUS.



TYPICAL DETAIL – F

FDA	TYPICALS
SHEET	13 OF 19
DATE	
MAP REF.	
COUNTY:	
TOWNSHIP:	
TOWN:	
RANGE:	
SECTION:	
MUNICIPALITY:	
AS BUILT:	
DATE:	
WBS:	
FILENAME:	

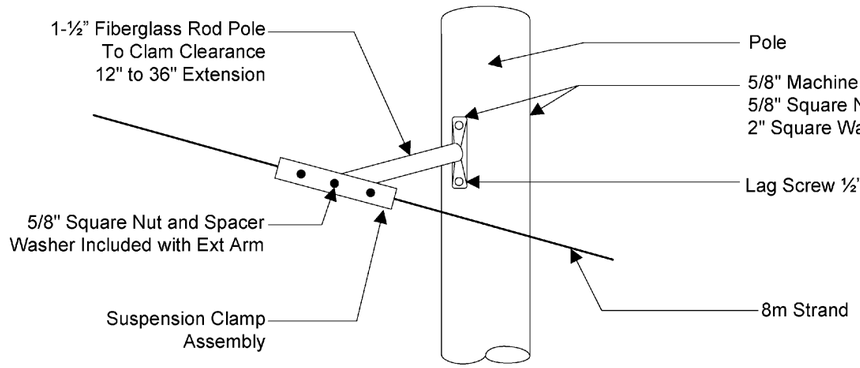
REV No:	DATE:	STATUS:



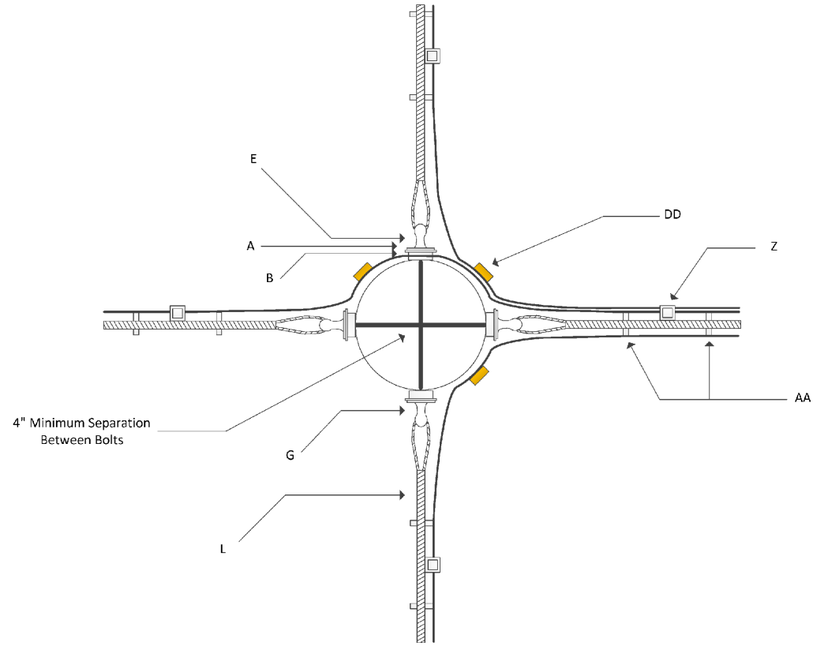
1. UTILITY AND ROW LINES ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE EXACT LOCATIONS PRIOR TO CONSTRUCTION.
2. ALL UNDERGROUND CABLE SHALL BE PLACED AT A MINIMUM DEPTH OF 36" BELOW THE SURFACE UNLESS OTHERWISE NOTED.
3. BOREPITS MAY BE MOVED BASED ON FIELD REVIEWS. THE FINAL AS-BUILT DRAWINGS WILL REFLECT THE FINAL BORE PIT LOCATIONS.

PROJECT NO. | TEL. CO. | EXCHANGE

Fiberglass Extension



Four Way (FW-1)

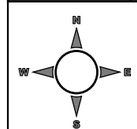


FW-1	Four Way	
Item		Description
E		Eye Bolts
G		Eye Nuts
A		Square Nuts
B		Square Washers
Z		Lashing Wire Clamps
AA		Strap and Spacers
DD		Fiber Marker/Tag
L		Dead End Grips
GA-1		Ground Assembly

USE CITY OF SUPERIOR STANDARDS
FOR SECONDARY POLE ATTACHMENTS

FDA TYPICALS
SHEET 14 OF 19
DATE
MAP REF.
COUNTY:
TOWNSHIP:
TOWN:
RANGE:
SECTION:
MUNICIPALITY:
AS BUILT:
DATE:
WBS:
FILENAME:

REV No:	DATE:	STATUS:



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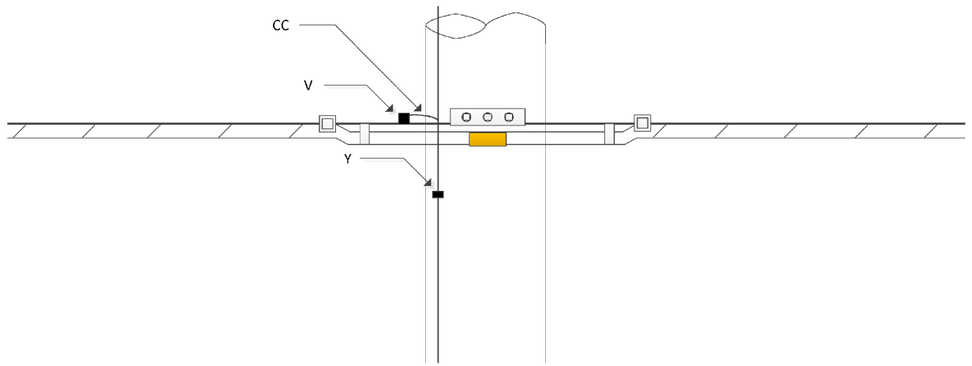
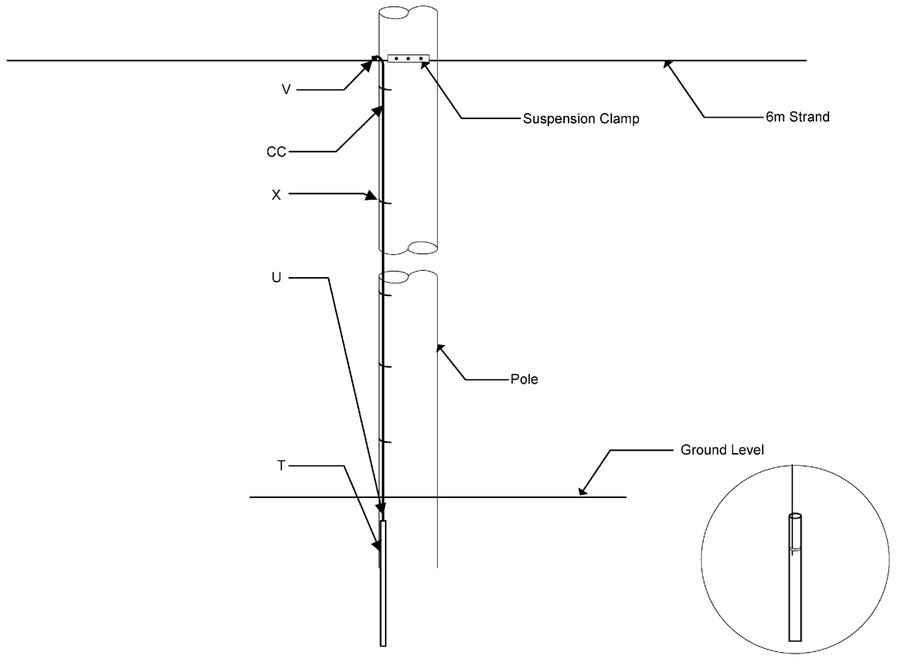
PROJECT NO. | TEL. CO. | EXCHANGE

Ground Assembly (GA-1)
(PM2a)



GA-1	Ground Assembly (PM2a)	
Item	Qty	Description
V	1	K1 Ground Clamp
CC	1	8" #6 Bare Copper
Y	1	Split Bolt

Ground Assembly GA-2

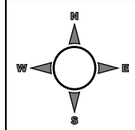


GA-2	Ground Assembly 2	
Item	No.	Material
V	1	K1 Ground Clamp
CC	1	25' #6 Bare Copper
T	1	8' 5/8 Ground Rod
U	1	5/8 Ground Rod Clamp
X	0	Copper States

USE CITY OF SUPERIOR STANDARDS
FOR SECONDARY POLE ATTACHMENTS

FDA	TYPICALS
SHEET	15 OF 19
DATE	
MAP REF.	
COUNTY:	
TOWNSHIP:	
TOWN:	
RANGE:	
SECTION:	
MUNICIPALITY:	
AS BUILT:	
DATE:	
WBS:	
FILENAME:	

REV No:	DATE:	STATUS:



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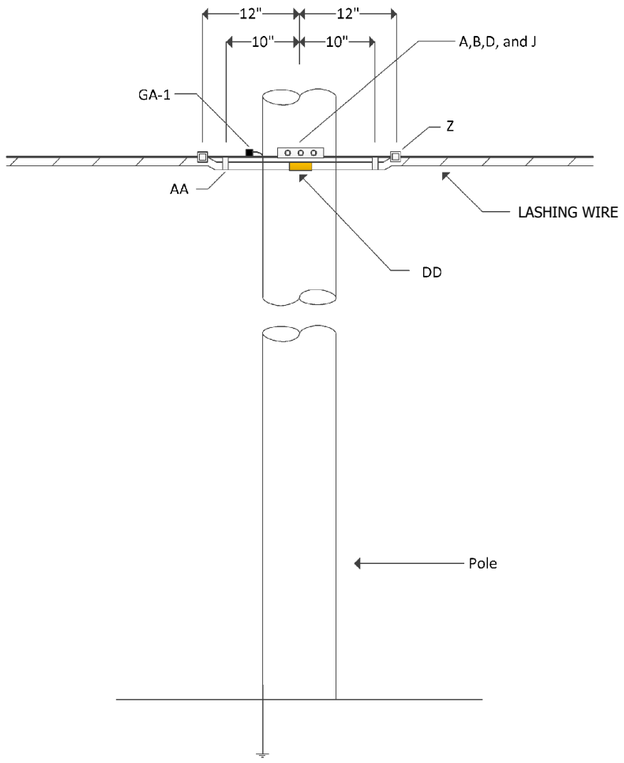
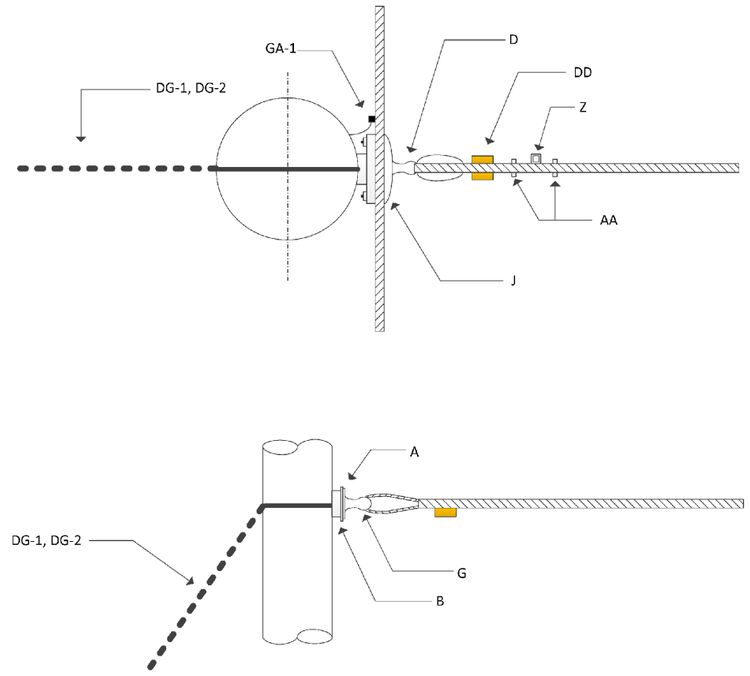
PROJECT NO. | TEL. CO. | EXCHANGE

Straight Through (ST-1)



ST-1	Straight Through 1	
Item	Qty	Description
J	1	3 Bolt Straight Suspension Clamp
D	1	Machine Bolt (Various Length)
B	2	Square Washers
A	2	Square Nuts
Z	2	Lashing Wire Clamps
DD	1	Fiber Marker/Tag
AA	2	Strap and Spacers
GA-1	1	Ground Assembly

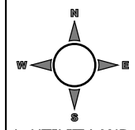
T-Pole (TP-1)



TP-1	T Pole	
Item	Qty	Description
J	1	3 Bolt Straight Suspension Clamp
D	1	Machine Bolt (Various Length)
B	1	Square Washers
AA	1	Square Nuts
Z	3	Lashing Wire Clamps
AA	4	Strap and Spacers
DD	2	Fiber Marker/Tag
G	1	Thimble Eye Nuts
DG-1	1	Down Guy Assembly
GA-1	1	Ground Assembly

FDA TYPICALS
SHEET 16 OF 19
DATE
MAP REF.
COUNTY:
TOWNSHIP:
TOWN:
RANGE:
SECTION:
MUNICIPALITY:
AS BUILT:
DATE:
WBS:
FILENAME:

REV No:	DATE:	STATUS:



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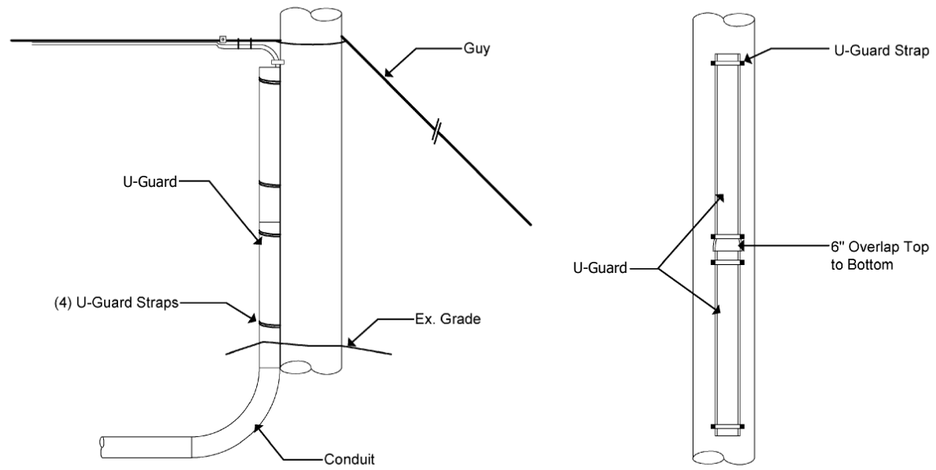
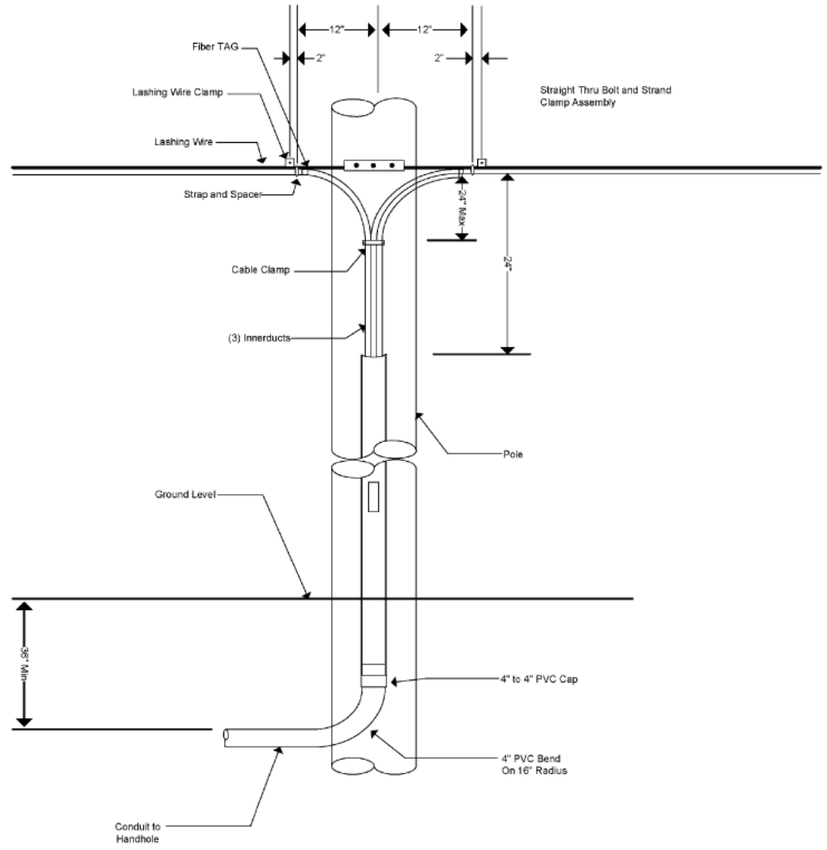
PROJECT NO. | TEL. CO. | EXCHANGE

Typical Deadend Pole Arrangement for Aerial to Buried Cable



ALL RISERS INSTALLED ON CITY OF SUPERIOR
JOINT OWNED POLES TO BE 4 INCH DIAMETER

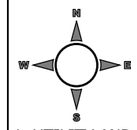
Typical Riser Pole Detail



ALL RISERS INSTALLED ON CITY OF SUPERIOR
JOINT OWNED POLES TO BE 4 INCH DIAMETER

FDA	TYPICALS
SHEET	17 OF 19
DATE	
MAP REF.	
COUNTY:	
TOWNSHIP:	
TOWN:	
RANGE:	
SECTION:	
MUNICIPALITY:	
AS BUILT:	
DATE:	
WBS:	
FILENAME:	

REV No:	DATE:	STATUS:



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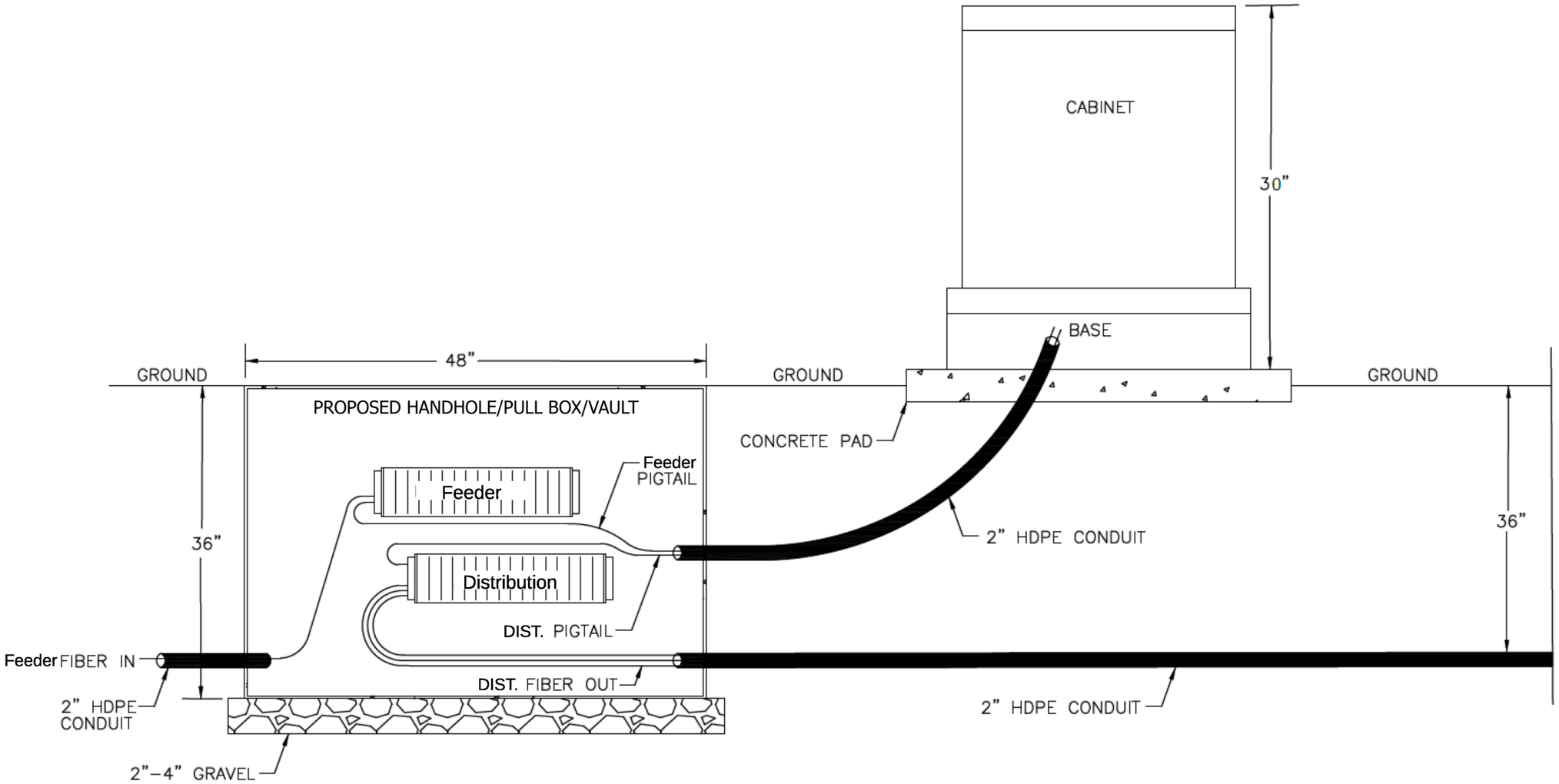
PROJECT NO.	TEL. CO.	EXCHANGE



Fiber Distribution Hub Detail - Concrete Pad Mounted, 100' Pre-terminated SC/APC Tails

FDA	TYPICALS
SHEET	18 OF 19
DATE	
MAP REF.	
COUNTY:	
TOWNSHIP:	
TOWN:	
RANGE:	
SECTION:	
MUNICIPALITY:	
AS BUILT:	
DATE:	
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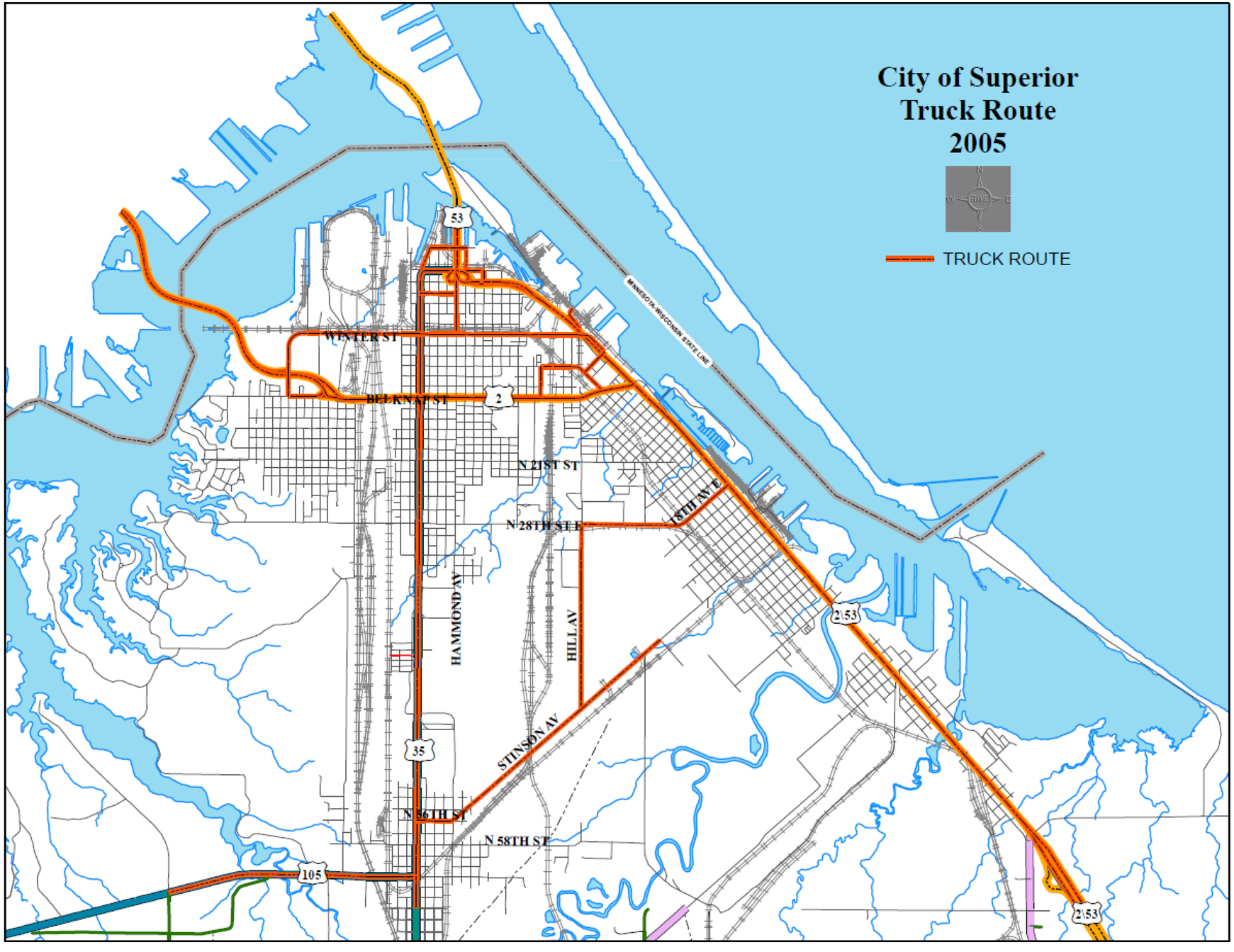

FDA	TYPICALS
SHEET	19 OF 19
DATE	
MAP REF.	
COUNTY:	
TOWNSHIP:	
TOWN:	
RANGE:	
SECTION:	
MUNICIPALITY:	
AS BUILT:	
DATE:	
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CITY OF SUPERIOR - URBAN TYPICAL SECTION

TYPICAL SECTION - LANE WIDTH DATA TABLE			LEGEND - REFER TO TYPICAL SECTION									
			FACE TO FACE MIN WIDTH	GUTTER	PARKING	PED SPACE	LANE	LANE	PED SPACE	PARKING	GUTTER	
			(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
ROAD CLASS	TYPICAL SECTION DESCRIPTION		Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ	Ⓘ	CENTERLINE
R1	2 WAY TRAFFIC, NO PARKING, SW PRESENT BOTH SIDES		28	2	0	0	12	12	0	0	2	PAINTED
	2 WAY TRAFFIC, PARKING ONE SIDE, SW PRESENT BOTH SIDES		34	2	0	0	12	12	0	6	2	PAINTED
	2 WAY TRAFFIC, PARKING BOTH SIDES, SW PRESENT BOTH SIDES	STANDARD	40	2	6	0	12	12	0	6	2	PAINTED
	2 WAY TRAFFIC, NO PARKING, NO SW		36	2	0	4	12	12	4	0	2	PAINTED
	2 WAY TRAFFIC, ALTERNATE PARKING, NO SW		42	2	0	4	12	12	4	6	2	PAINTED
	2 WAY TRAFFIC, PARKING BOTH SIDES, NO SW		48	2	6	4	12	12	4	6	2	PAINTED
R2	2 WAY TRAFFIC, NO PARKING, SW PRESENT		26	2	0	0	11	11	0	0	2	NO DELINEATION
	2 WAY TRAFFIC, ALTERNATE PARKING, SW PRESENT	STANDARD	32	2	0	0	11	11	0	6	2	NO DELINEATION
	2 WAY TRAFFIC, PARKING BOTH SIDES, SW PRESENT		38	2	6	0	11	11	0	6	2	NO DELINEATION
	2 WAY TRAFFIC, NO PARKING, NO SW		30	2	0	4	11	11	0	0	2	NO DELINEATION
	2 WAY TRAFFIC, ALTERNATE PARKING, NO SW		36	2	0	4	11	11	0	6	2	NO DELINEATION
	2 WAY TRAFFIC, PARKING BOTH SIDES, NO SW		42	2	6	4	11	11	0	6	2	NO DELINEATION
R3	2 WAY TRAFFIC, NO PARKING, SW PRESENT		24	2	0	0	10	10	0	0	2	NO DELINEATION
	2 WAY TRAFFIC, ALTERNATE PARKING, SW PRESENT	STANDARD	28	2	0	0	10	10	0	4	2	NO DELINEATION
	2 WAY TRAFFIC, PARKING BOTH SIDES, SW PRESENT		32	2	4	0	10	10	0	4	2	NO DELINEATION
	2 WAY TRAFFIC, NO PARKING, NO SW		28	2	0	4	10	10	0	0	2	NO DELINEATION
	2 WAY TRAFFIC, ALTERNATE PARKING, NO SW		32	2	0	4	10	10	0	4	2	NO DELINEATION
	2 WAY TRAFFIC, PARKING BOTH SIDES, NO SW		36	2	4	4	10	10	0	4	2	NO DELINEATION

TYPICAL SECTION DRAWN IS R1 STANDARD

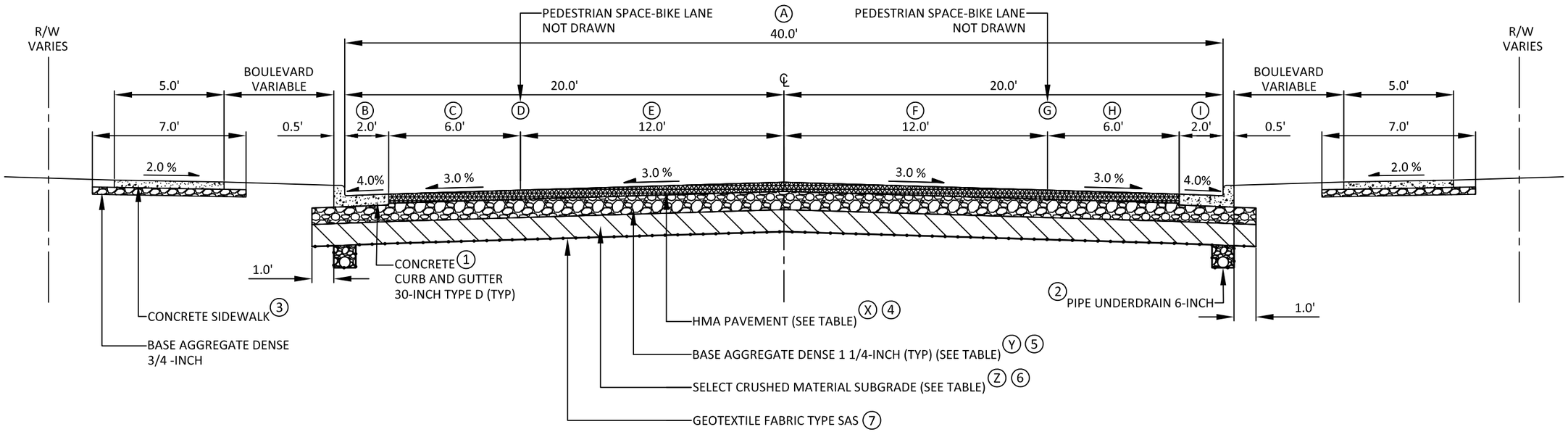
GENERAL NOTES

1. CONCRETE CURB AND GUTTER SHALL CONFORM TO WISDOT SDD 08D01.
2. PIPE UNDERDRAIN SHALL CONFORM TO WISDOT EDGEDRAIN AND BASE AGGREGATE OPEN GRADED SDD 08D15.
3. All CITY SIDEWALK SHALL CONFORM TO CITY OF SUPERIOR SIDEWALK PROGRAM CONSTRUCTION DETAILS AND WISDOT CURB RAMPS SDD 08D05. ALL CITY SIDEWALK IS 4 INCHES THICK WITH THE EXCEPTION OF DRIVABLE SURFACES. ALLEYS AND DRIVEWAYS THAT INCLUDE SIDEWALK ARE REQUIRED TO BE A MINIMUM OF 7 INCHES THICK.
4. HMA PAVEMENT SHALL CONFORM TO SECTION 460 HOT MIX ASPHALT PAVEMENT IN THE WISDOT STANDARD SPECIFICATIONS .
5. BASE AGGREGATE DENSE 1 $\frac{1}{4}$ INCH SHALL CONFORM TO SECTION 305 DENSE-GRADED BASE IN WISDOT STANDARD SPECIFICATIONS.
6. SUBGRADE SHALL CONFORM TO SECTION 301 BASE, SUBBASE, AND SUBGRADE AGGREGATE IN WISDOT STANDARD SPECIFICATIONS.
7. GEOTEXTILE FABRIC SHALL CONFORM TO SECTION 645 GEOSYNTHETICS IN THE WISDOT STANDARD SPECIFICATIONS.

ALL DRIVEWAYS SHALL CONFORM TO WISDOT SDD 08D18, 08D19, 08D20, 08D21 AND 08D22.

ALL PAVEMENT MARKINGS SHALL FOLLOW THE WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

ALL MATERIALS FOR STREET CONSTRUCTION SHALL FOLLOW THE WISCONSIN DEPARTMENT OF TRASPORTATION STANDARD SPECIFICATIONS FOR THE CURRENT CONSTRUCTION YEAR.



CROSS SECTIONAL ELEMENTS						
ROAD CLASS	EXPECTED TRUCK PATTERN	ASPHALT THICKNESS	DENSE GRADED AGGREGATE THICKNESS	SUBGRADE CORRECTON LAYER THICKNESS	CONCRETE SIDEWALK THICKNESS	CONCRETE SIDEWALK AGGREGATE LAYER
		Ⓧ	Ⓨ	Ⓩ		
R1	Low Volume Through Trucks	5"	10"	12"	4"	4"
R2	Local Delivery	4"	8"	12"	4"	4"
R3	Immediate Delivery	4"	8"	12"	4"	4"

NOT TO SCALE

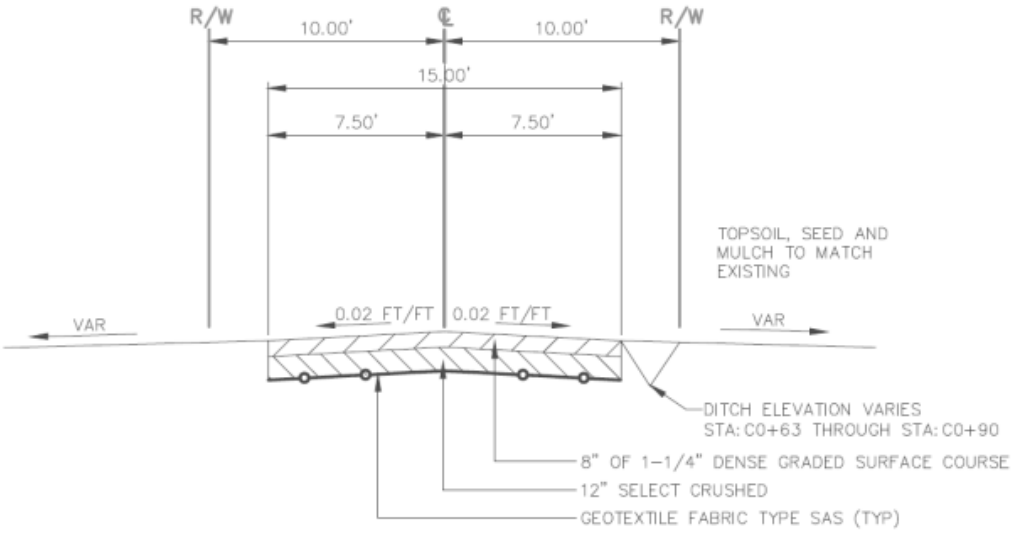
URBAN TYPICAL CROSS SECTION

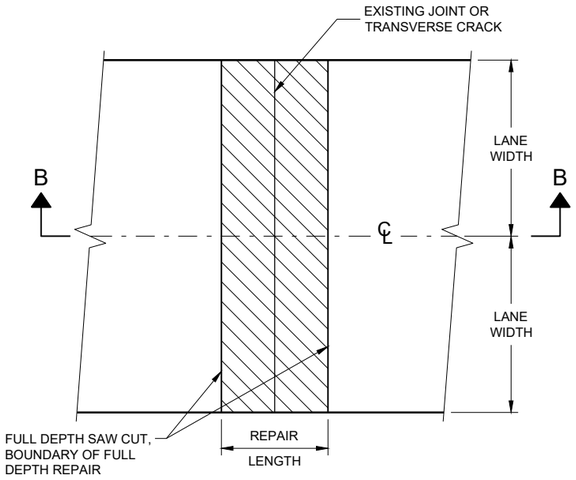
CITY OF SUPERIOR
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE: 03/2024

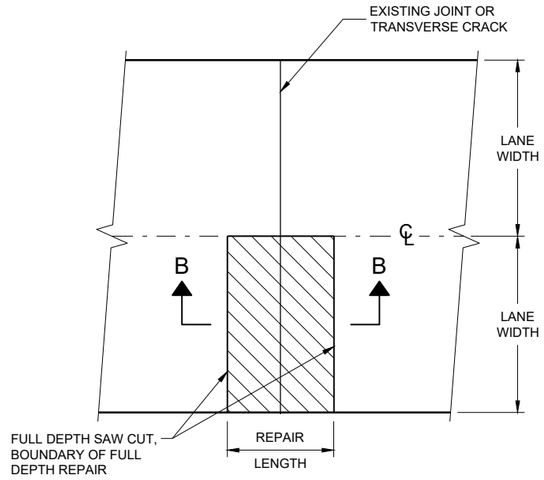
City of Superior Alley Typical Section

The drawing shown is a gravel alley, for any blacktop alley, add 4 inches of blacktop to the surface. For any concrete alley, match existing concrete depths or more than 7 inches. If there is concrete and asphalt, then match the existing profile of each surface type.





PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

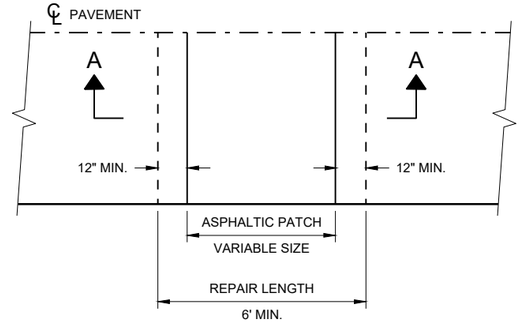
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

PROVIDE A 6 FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREA TO ADJACENT TRANSVERSE JOINT OR CRACK.

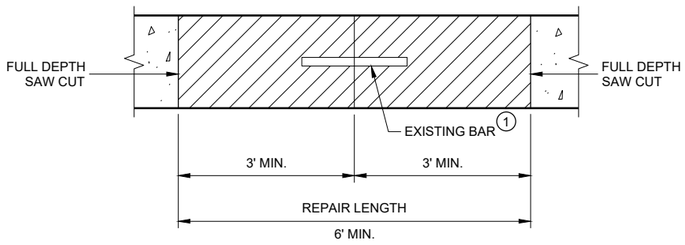
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NON-DOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

(1) DOWEL BARS MAY NOT BE PRESENT.



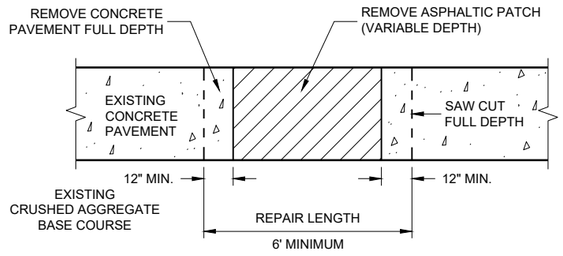
PLAN VIEW

FULL DEPTH CONCRETE PAVEMENT REMOVAL



SECTION B - B

CONCRETE REMOVAL

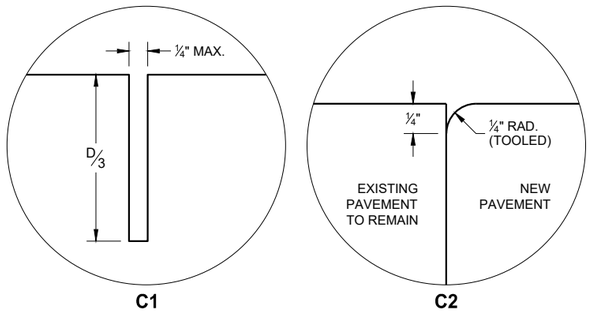


SECTION A - A

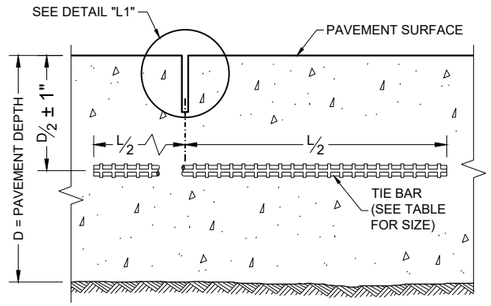
HMA PATCH REMOVAL

CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

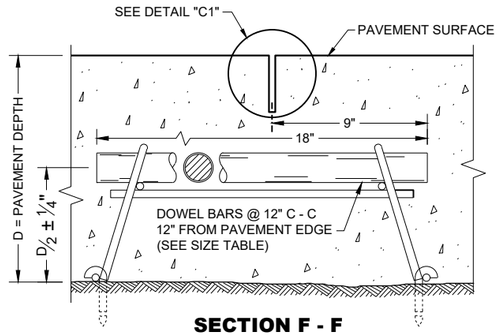


TRANSVERSE JOINTS



SECTION C - C

SAWED LONGITUDINAL JOINT



SECTION F - F

DOWELED CONTRACTION JOINT

GENERAL NOTES

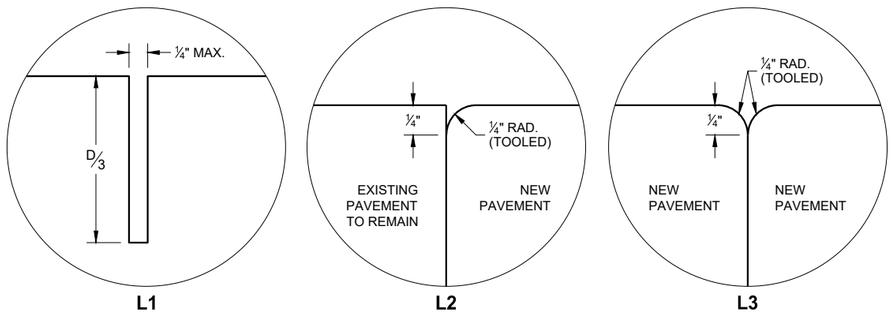
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE PAVEMENT REPAIRS OF EXISTING NON-DOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

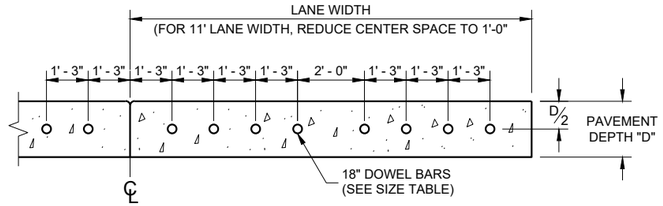
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

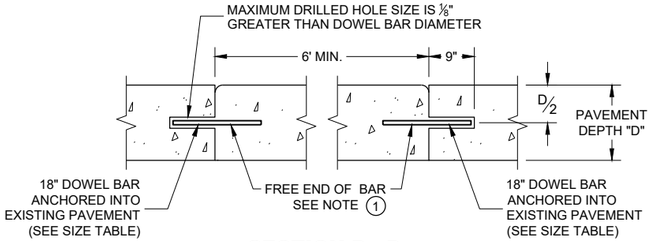


LONGITUDINAL JOINTS



SECTION E - E

DRILLED DOWEL BAR CONSTRUCTION JOINT



SECTION D - D

TIE BAR TABLE

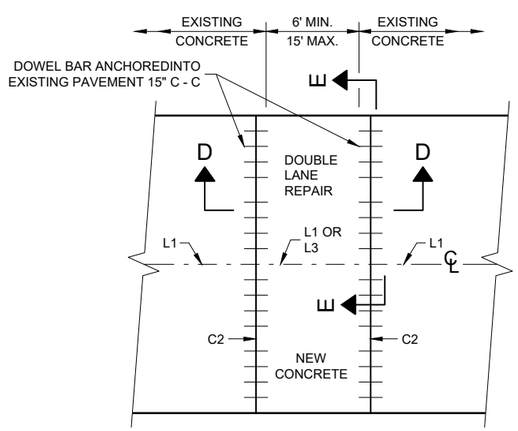
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

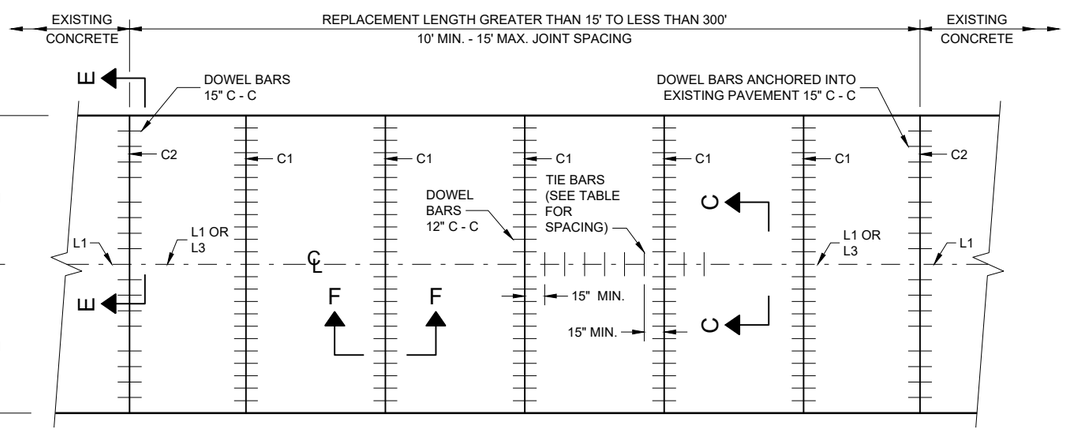
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	DRILLED DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	NONE	12'
7", 7 ½"	1"	1"	14'
8" & ABOVE	1 ¼"	1 ¼"	15'



PLAN VIEW

MULTILANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

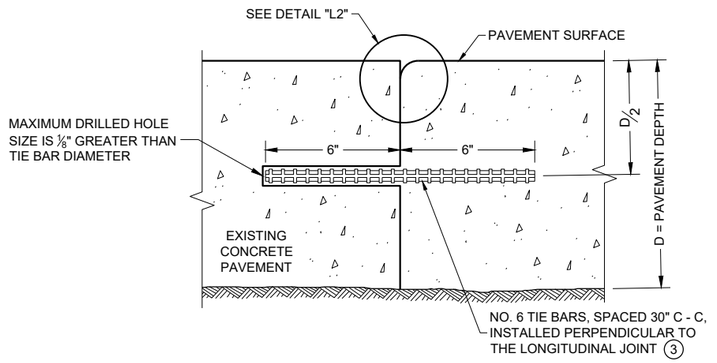
MULTILANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 13C09 - 17b

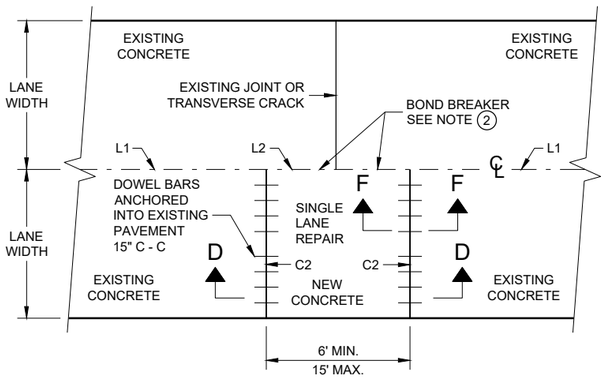


SECTION G - G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

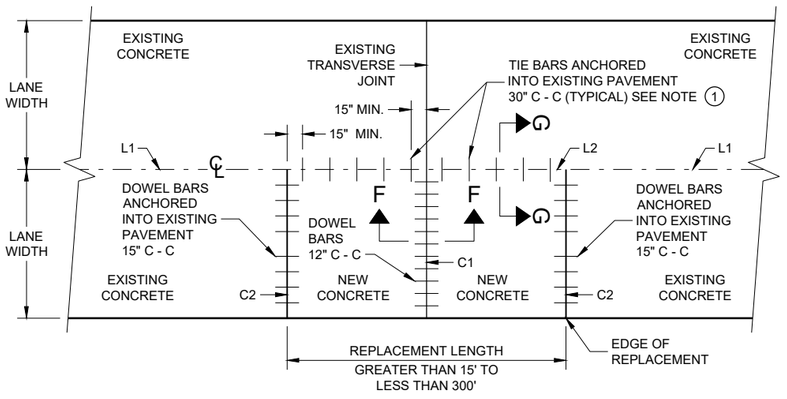
GENERAL NOTES

1. WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
2. USE AN ENGINEER APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
3. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

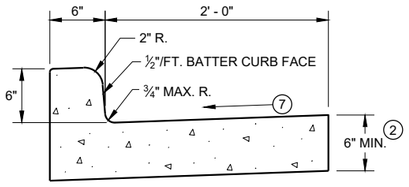
/S/ Peter Kemp P.E.
PAVEMENT SUPERVISOR

FHWA

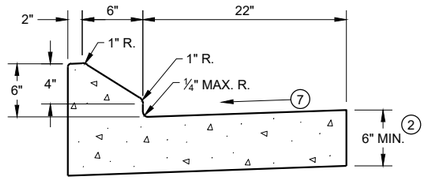
6

SDD 13C09 - 17c

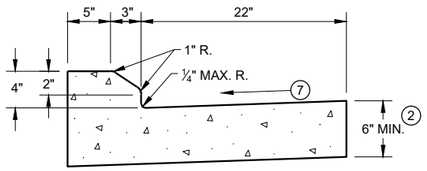
SDD 08D01-a Concrete Curb and Gutter



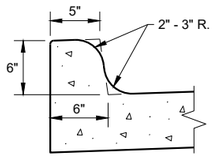
TYPES A (1) & D



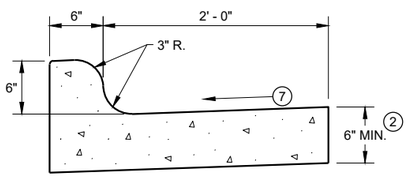
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

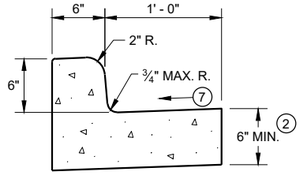


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



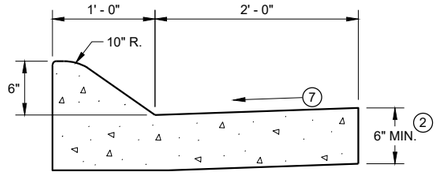
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"



TYPES A (1) & D

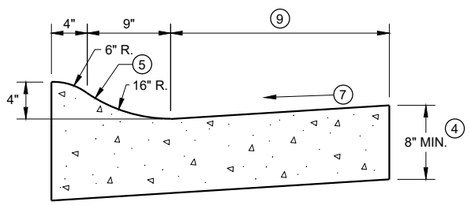
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A (1) & D

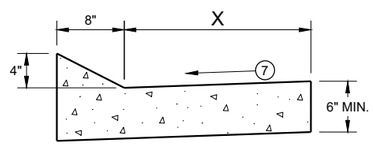
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

TBT & TBTT	X
30"	22"
36"	28"

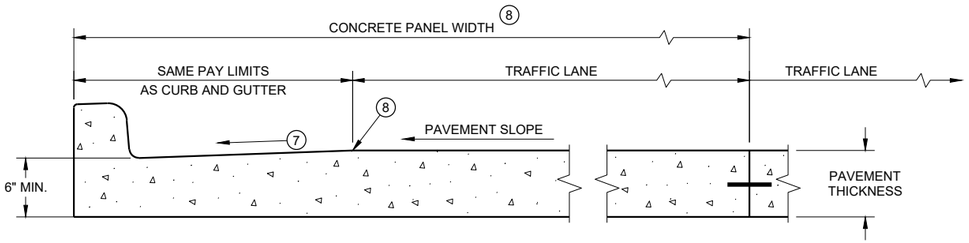


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

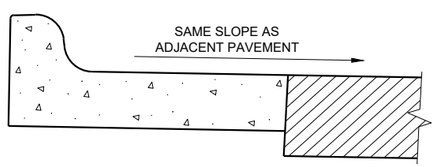
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER (6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

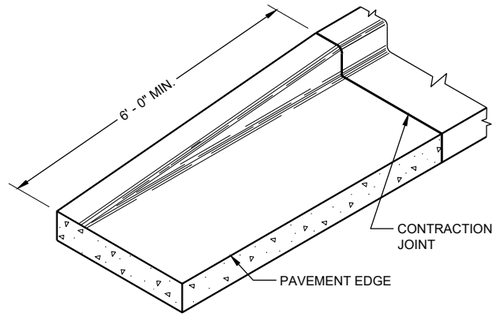
(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

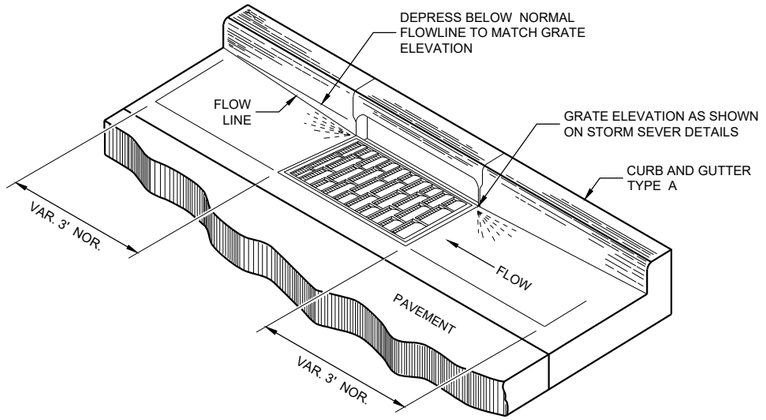
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D01-b Concrete Gutter, Ties, and Curb and Gutter Applications



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

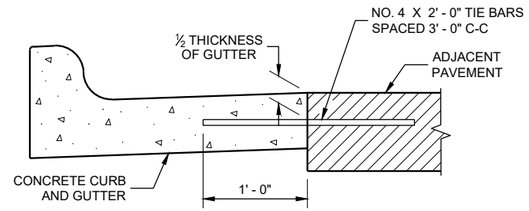
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

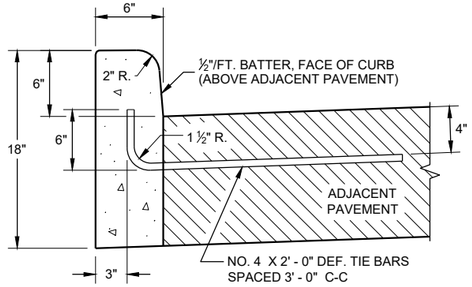
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

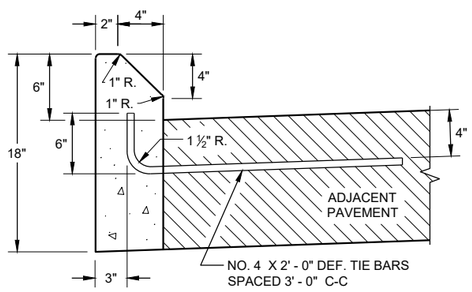
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

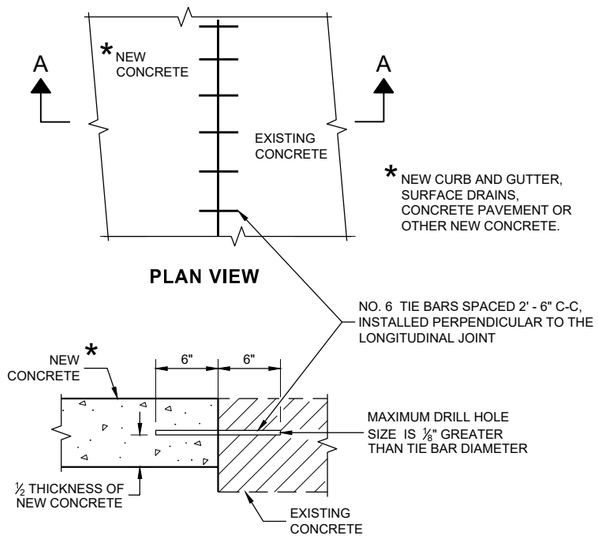


TYPES A (1) & D



TYPES G (1) & J

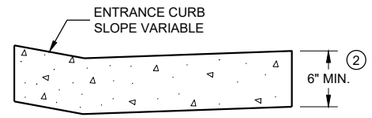
CONCRETE CURB



PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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SDD 08D01 - 22b

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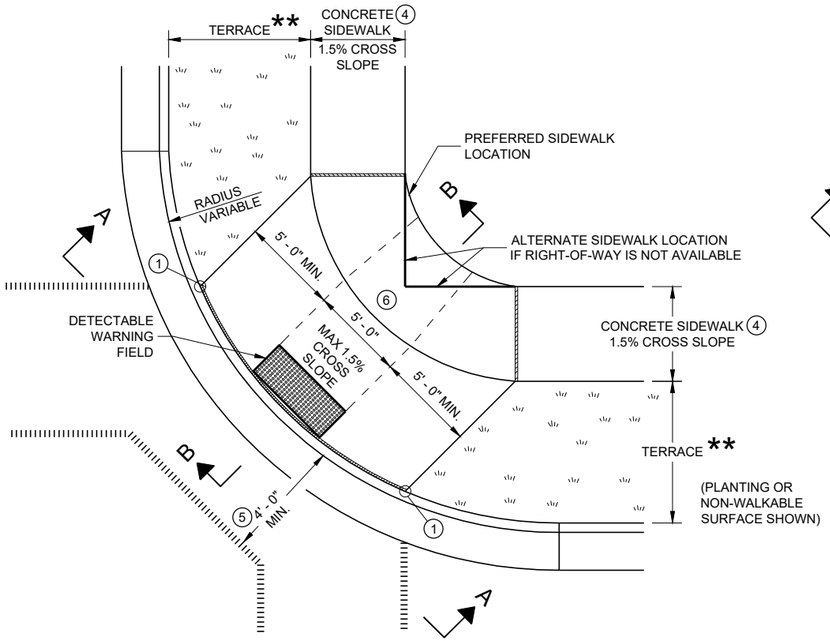
SDD 08D01 - 22b

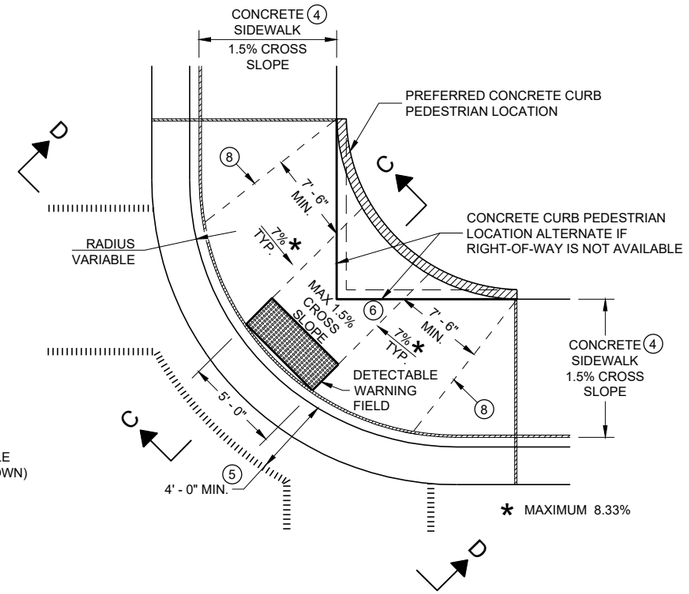
SDD 08D05-a: Curb Ramps Types 1 and 1-A



PLAN VIEW

CURB RAMP TYPE 1

(CENTER OF CORNER RADIUS)



PLAN VIEW

CURB RAMP TYPE 1 - A

(NO TERRACE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FILED SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD"

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

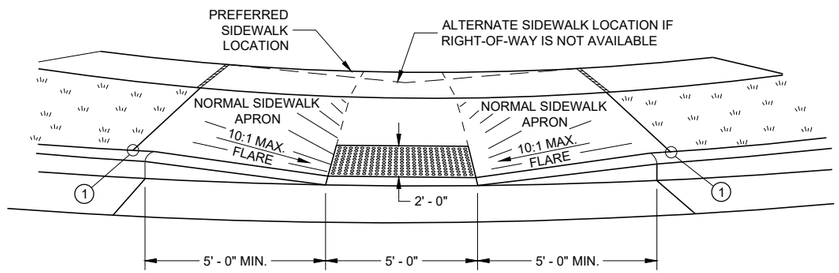
(3) MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

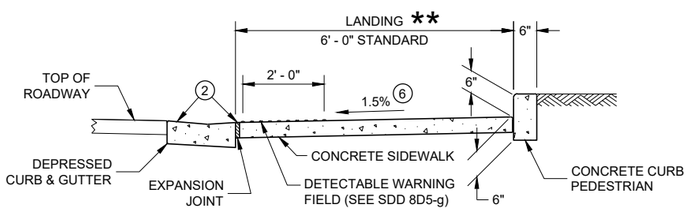
(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.



VIEW A - A FOR TYPE 1

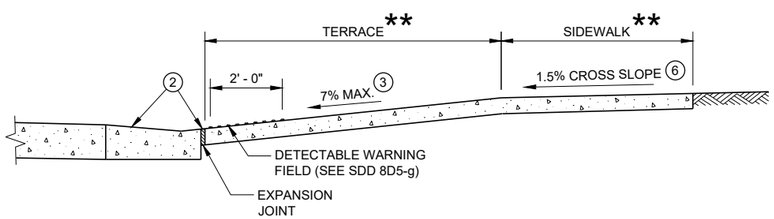


SECTION C - C FOR TYPE 1 - A

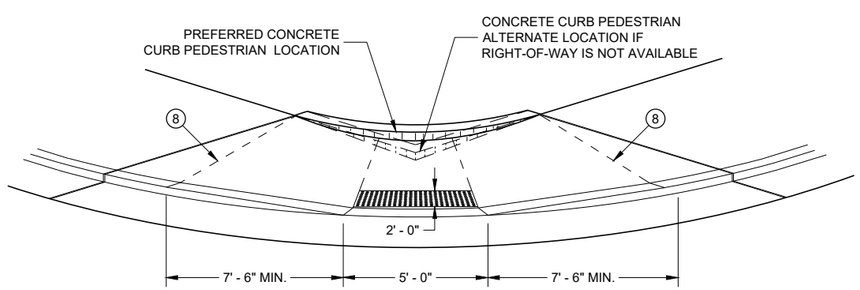
LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B - B FOR TYPE 1



VIEW D - D FOR TYPE 1 - A

CURB RAMPS TYPE 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

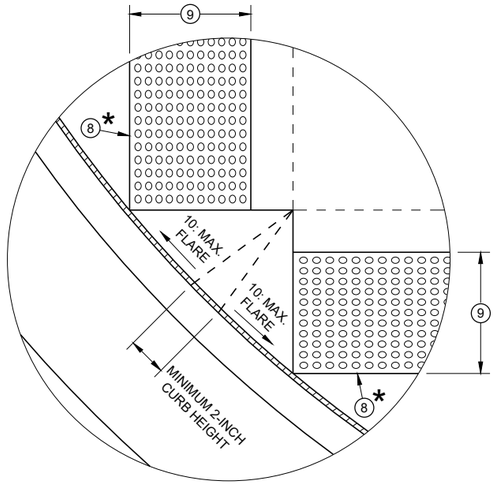
6

SDD 08D05 - 20a

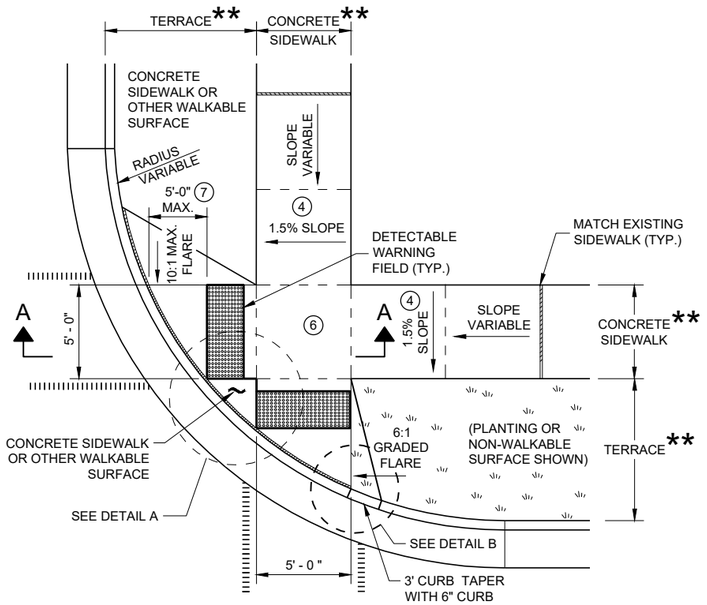
6

SDD 08D05 - 20a

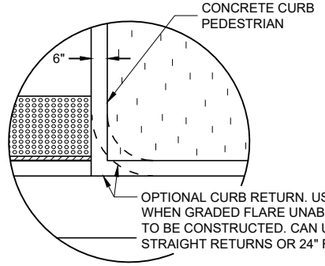
SDD 08D05-b Curb Ramps Types 2 and 3



DETAIL A



PLAN VIEW
CURB RAMP TYPE 2
(CENTER OF CORNER RADIUS)



DETAIL B

PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.

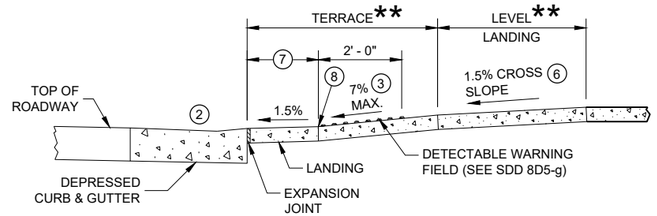
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

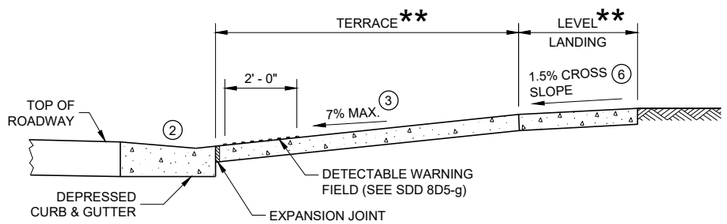
(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.



SECTION A - A FOR TYPE 2

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

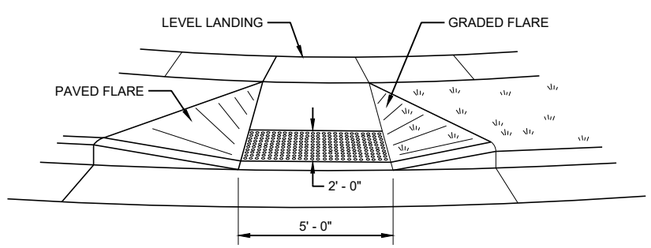
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B - B FOR TYPE 3

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



VIEW C - C FOR TYPE 3

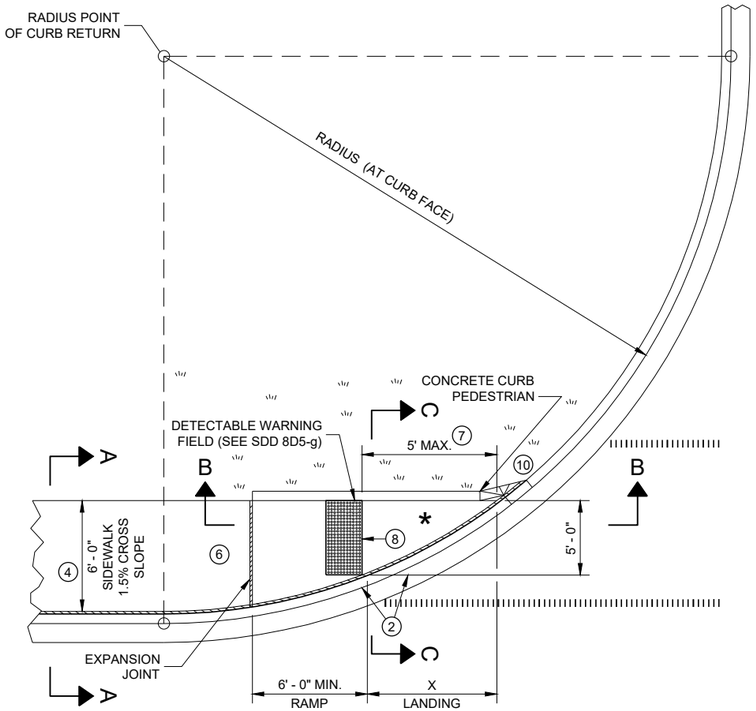
CURB RAMPS TYPE 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D05 - 20b

SDD 08D05-c Curb Ramps Types 4A and 4A1

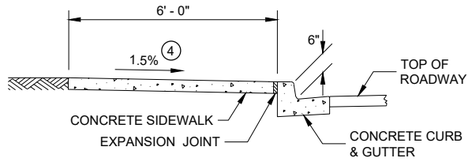


PLAN VIEW

CURB RAMP TYPE 4A

RADIUS (AT CURB FACE)	X
10 FEET	4' - 7"
15 FEET	6' - 5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A - A FOR TYPE 4A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

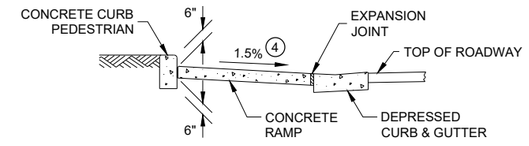
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

LEGEND

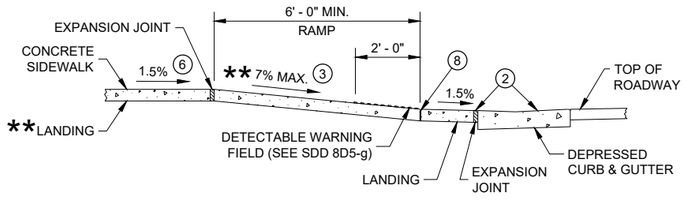
½" EXPANSION JOINT SIDEWALK

CONTRACTION JOINT SIDEWALK

PAVEMENT MARKING CROSSWALK (WHITE)



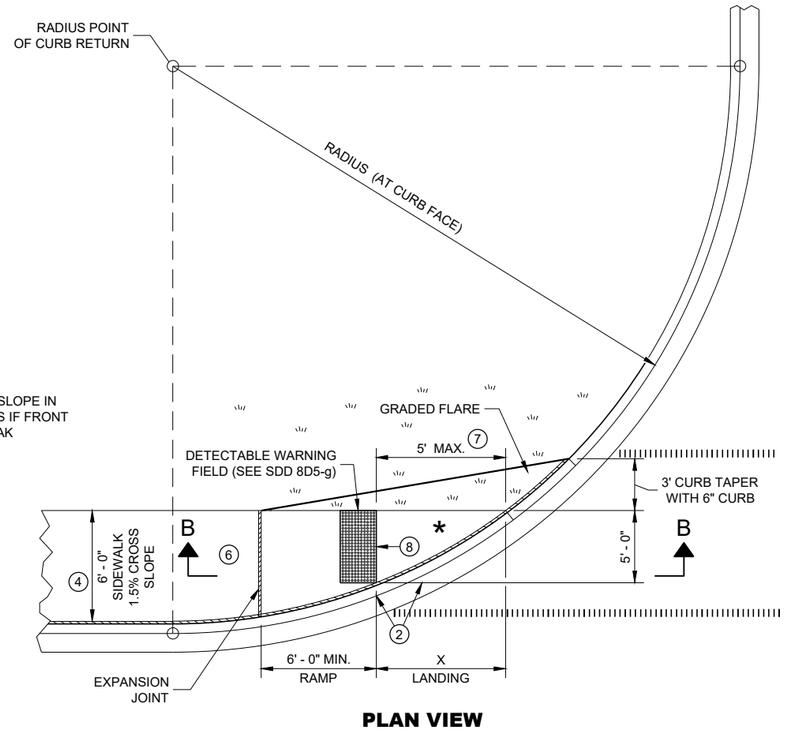
SECTION C - C FOR TYPE 4A



SECTION B - B FOR TYPE 4A AND TYPE 4A1

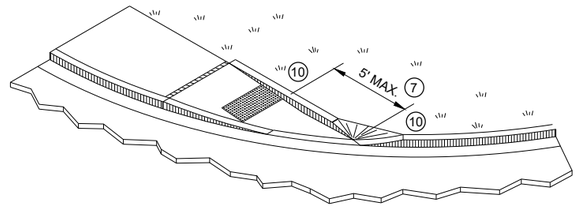
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

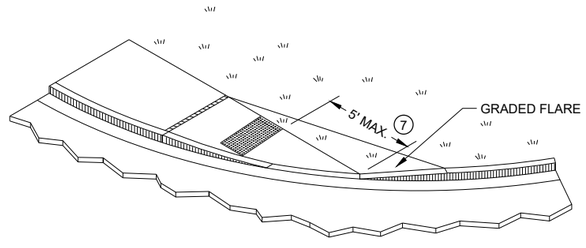


PLAN VIEW

CURB RAMP TYPE 4A1



ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

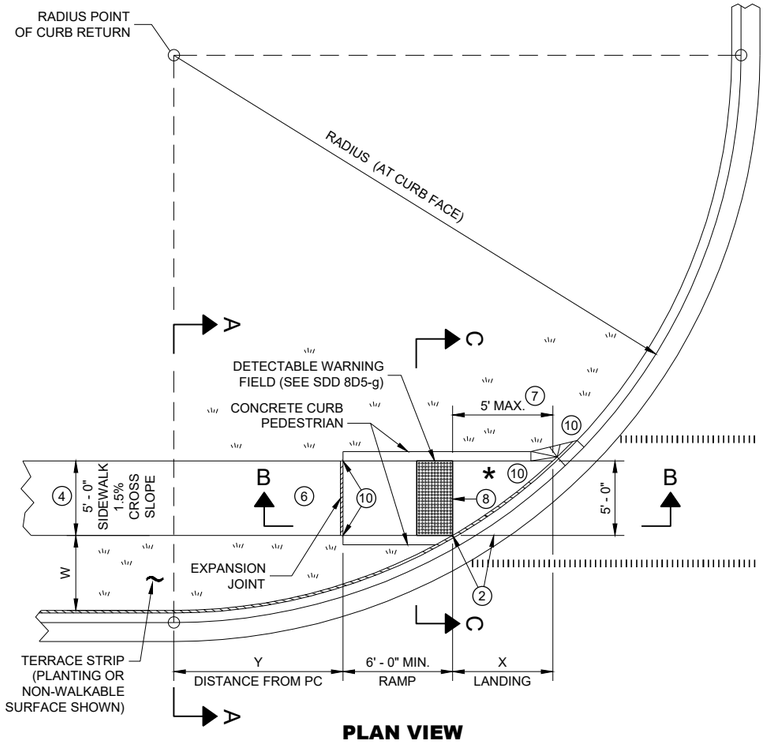
CURB RAMPS
TYPE 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D05 - 20c

SDD 08D05-d: Curb Ramps Types 4B and 4B1



PLAN VIEW

CURB RAMP TYPE 4B

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2' - 10 ¼"	0' - 5"	2' - 1"	1' - 4 ½"	1' - 5"	2' - 1"	0' - 10"	2' - 7 ½"	0' - 3 ¼"	3' - 0 ¼"						
15 FEET	4' - 6 ¾"	2' - 1 ¾"	3' - 9"	3' - 5 ¾"	3' - 1 ¼"	4' - 6"	2' - 6 ¾"	5' - 4 ½"	2' - 1"	6' - 1"	1' - 8"	6' - 8 ½"	1' - 3 ¼"	7' - 2 ½"	0' - 10 ¾"	7' - 7 ¼"
20 FEET	5' - 9 ¾"	3' - 6 ½"	4' - 11 ½"	5' - 1 ¾"	4' - 3 ¼"	6' - 5 ½"	3' - 8 ¾"	7' - 7"	3' - 3"	8' - 6 ½"	2' - 10"	9' - 4 ½"	2' - 5 ½"	10' - 1 ¼"	2' - 1 ¼"	10' - 9"
30 FEET			6' - 9 ¼"	7' - 11 ¼"	6' - 0 ¼"	9' - 8"	5' - 5"	11' - 1 ¾"	4' - 10 ¾"	12' - 5 ¾"	4' - 5 ½"	13' - 7 ¾"	4' - 0 ¾"	14' - 8 ½"	3' - 8 ½"	15' - 8 ¼"
40 FEET									6' - 1 ¾"	15' - 8 ½"	5' - 8"	17' - 2"	5' - 3"	18' - 5 ¾"	4' - 10 ¾"	19' - 8 ¼"
50 FEET															5' - 10 ¼"	23' - 2"

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

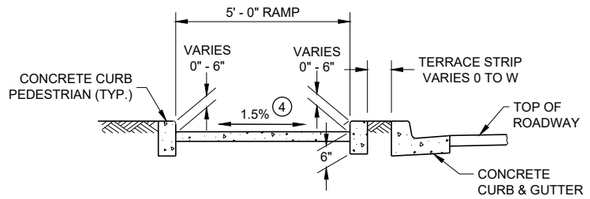
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

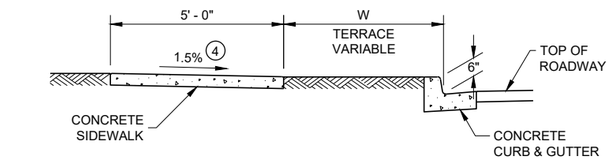
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

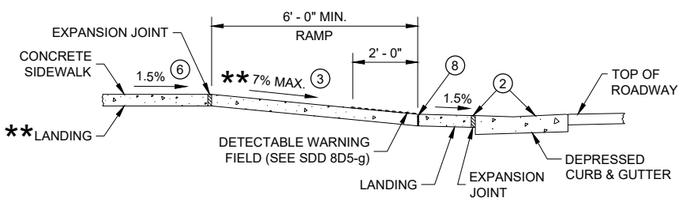
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



SECTION C - C FOR TYPE 4B



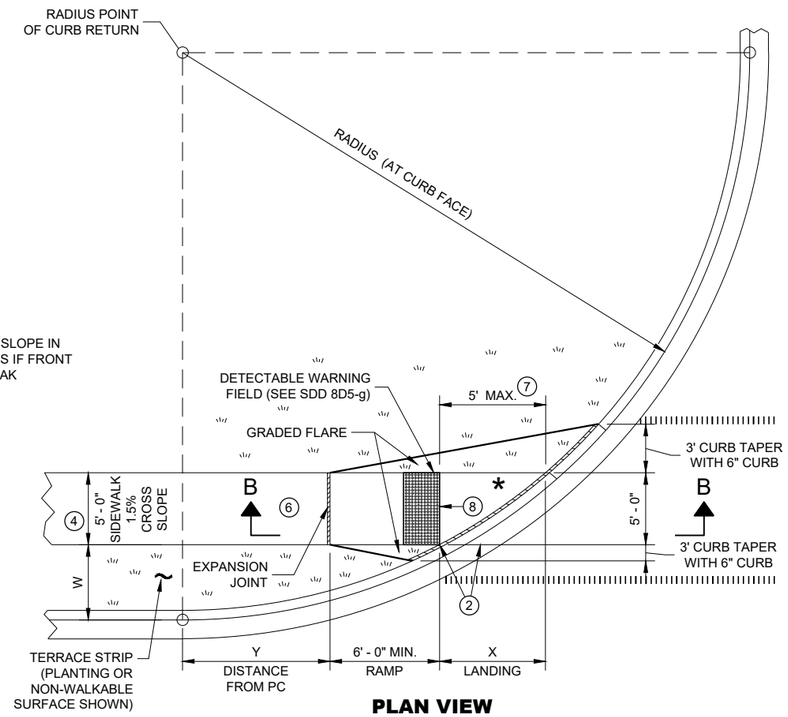
SECTION A - A FOR TYPE 4B



SECTION B - B FOR TYPE 4B AND TYPE 4B1

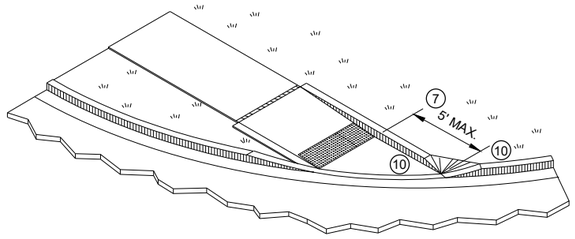
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

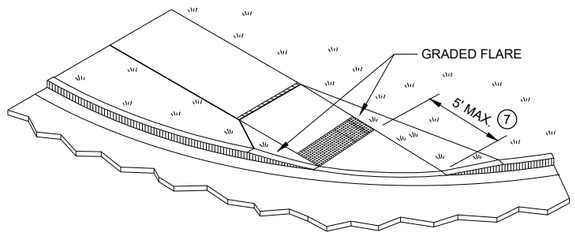


PLAN VIEW

CURB RAMP TYPE 4B1



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

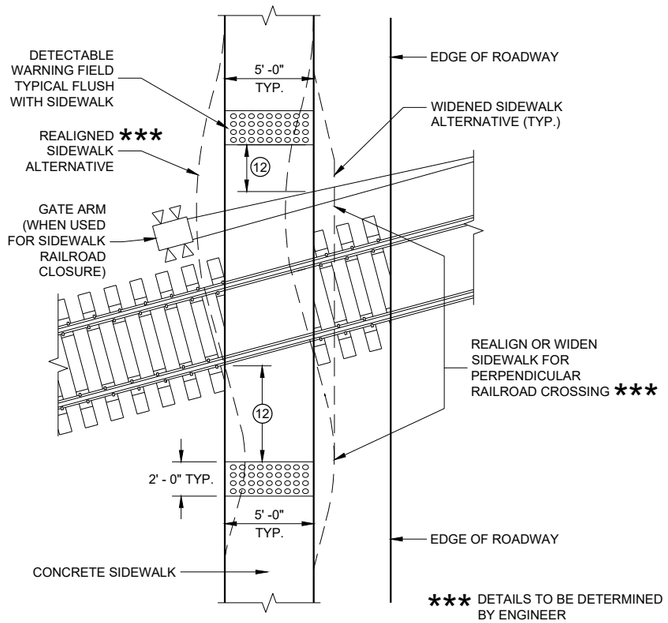
CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D05 - 20d

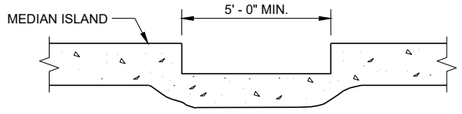
6

SDD 08D05-e: Curb Ramps Types 5, 6, 7A, 7B and 8

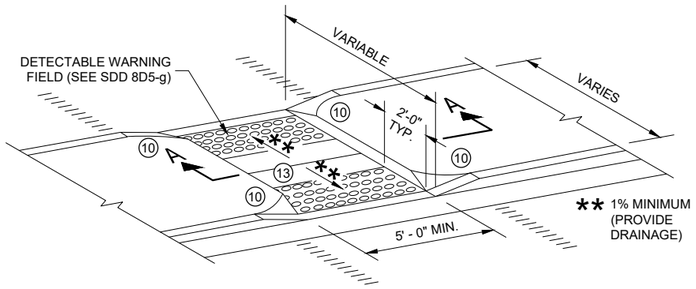


CURB RAMP TYPE 8

DETECTABLE WARNINGS AT RAILROAD CROSSING



SECTION A - A FOR TYPE 5



CURB RAMP TYPE 5

MEDIAN ISLAND NON-ELEVATED PEDESTRIAN CROSSING

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ½ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

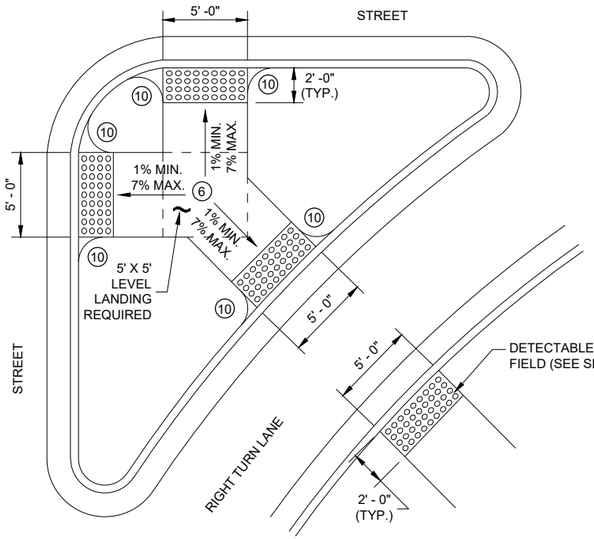
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

LEGEND

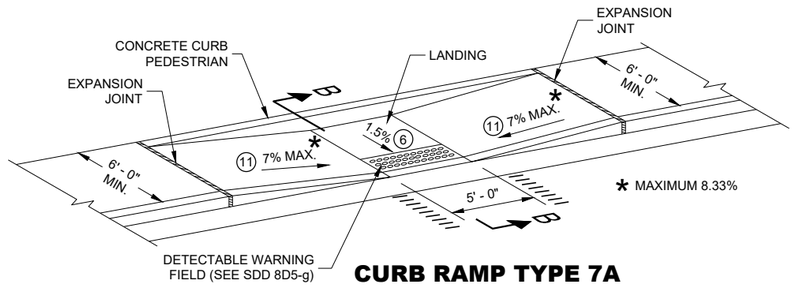
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



CURB RAMP TYPE 6

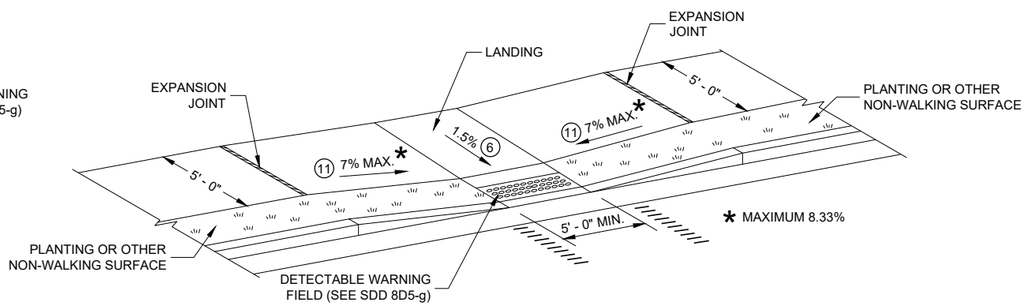
DETECTABLE WARNING AT ISLANDS

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



CURB RAMP TYPE 7A

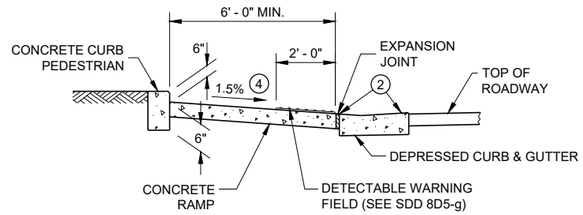
MID BLOCK CROSSING



CURB RAMP TYPE 7B

MID BLOCK CROSSING

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.



SECTION B - B FOR TYPE 7A

CURB RAMPS TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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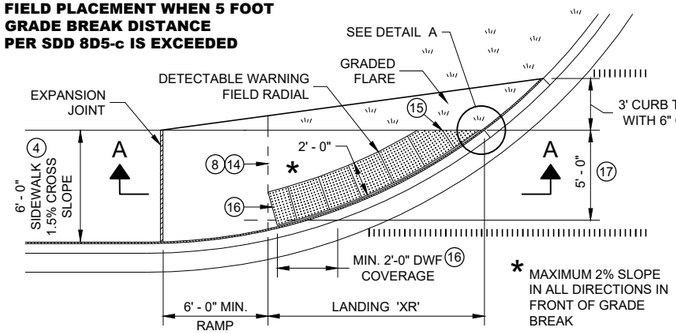
SDD 08D05 - 20e

6

SDD 08D05 - 20e

SDD 08D05-f Curb Ramps Radial Detectable Warning Field Applications

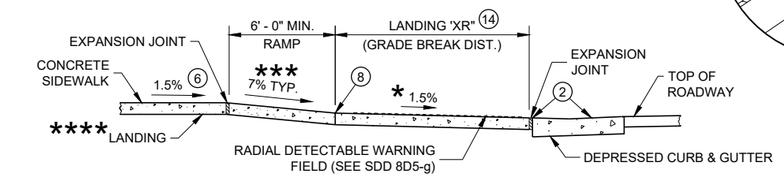
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



PLAN VIEW

CURB RAMP TYPE 4A1

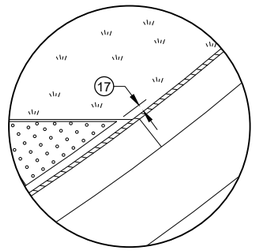
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

SECTION A - A FOR TYPE 4A1



DETAIL A

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AD ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

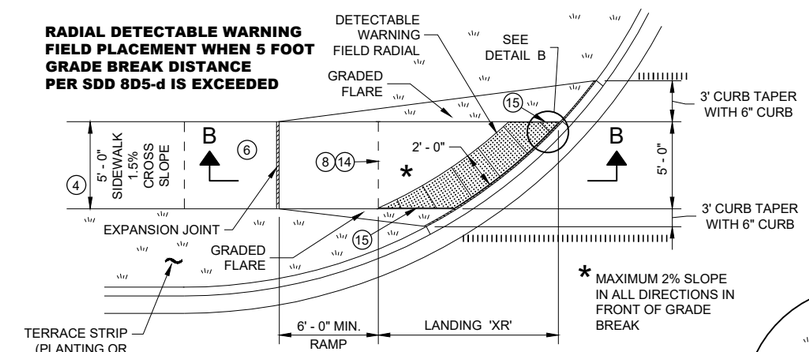
(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

(17) A MAXIMUM 3 INCH CONCRETE BORDER WITH IS ALLOWABLE IN FROM OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

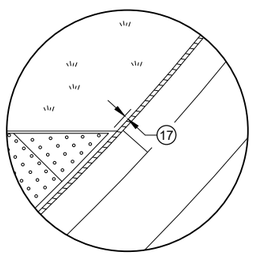
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



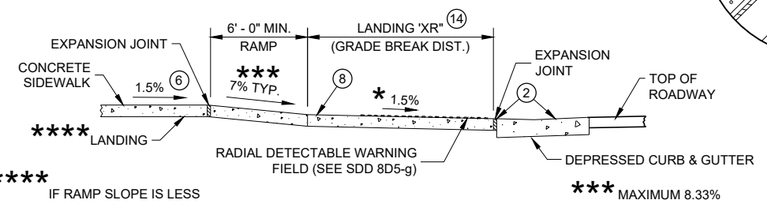
PLAN VIEW

CURB RAMP TYPE 4B1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



DETAIL B

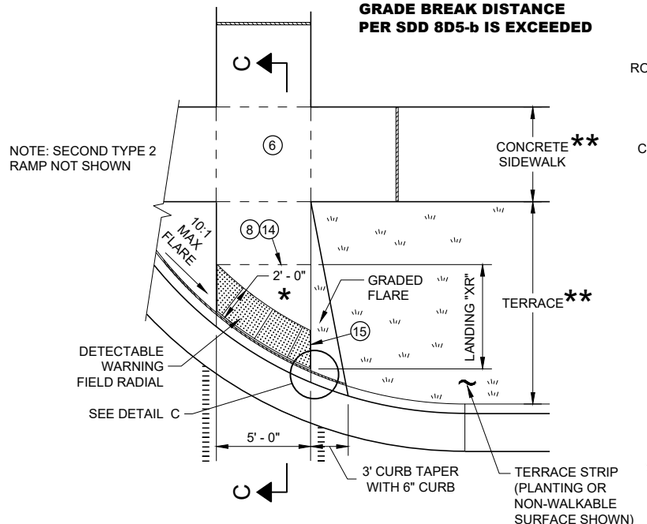


**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

SECTION B - B FOR TYPE 4B1

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-b IS EXCEEDED

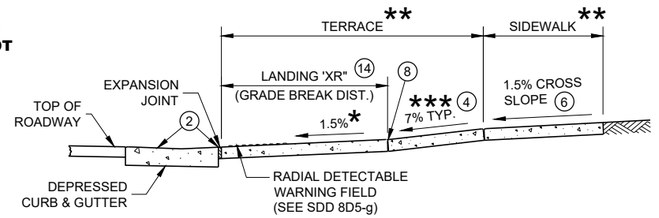


PLAN VIEW

CURB RAMP TYPE 2

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

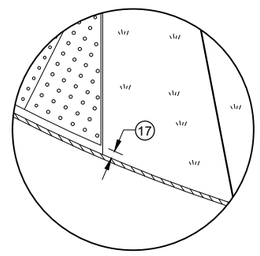


SECTION C - C FOR TYPE 2

* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** MAXIMUM 8.33%



DETAIL C

CURB RAMPS
RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

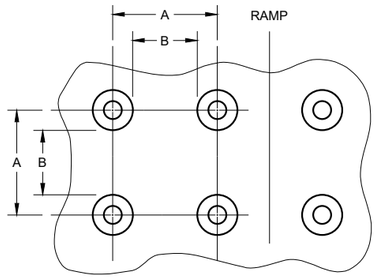
6

SDD 08D05 - 20f

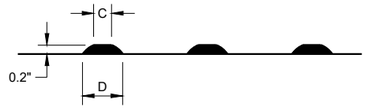
SDD 08D05-g: Curb Ramps Rectangular and Radial Detectable Warning Plates

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

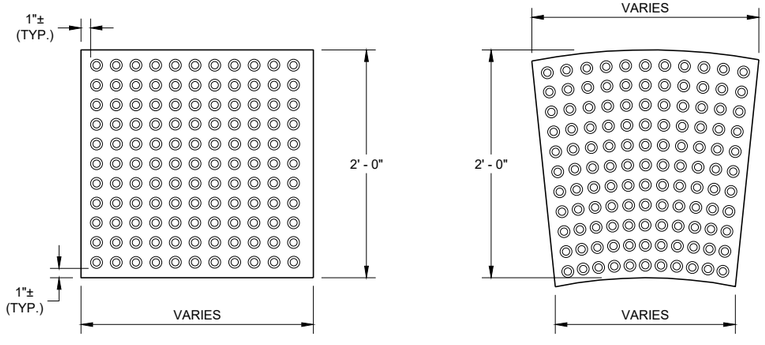


PLAN VIEW



ELEVATION VIEW

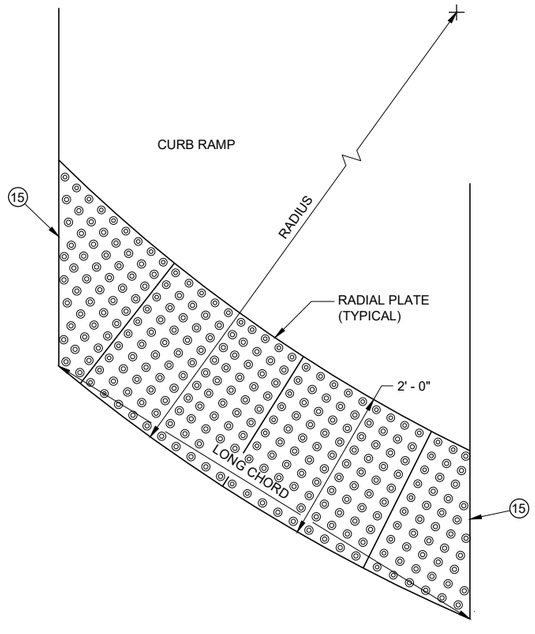
TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



RECTANGULAR PLATES

RADIAL PLATES

PLAN VIEW
DETECTABLE WARNING FIELDS (TYPICAL)



PLAN VIEW
RADIAL DETECTABLE WARNING FIELD ATTRIBUTES

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

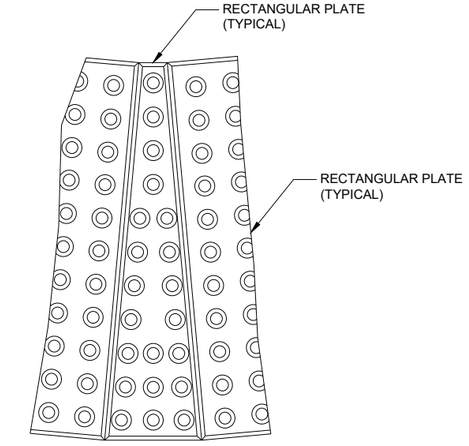
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGE PLATES IN COMBINATION WITH SQUARE PLATES ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.



PLAN VIEW
RADIAL WEDGE PLATE CONNECTION DETAIL

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

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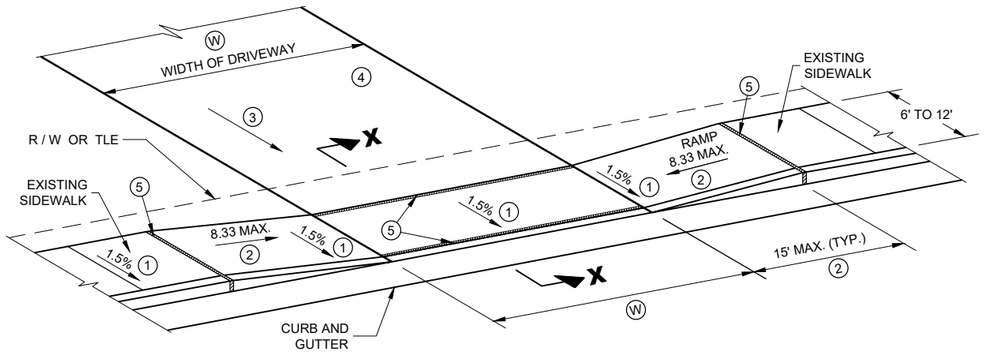
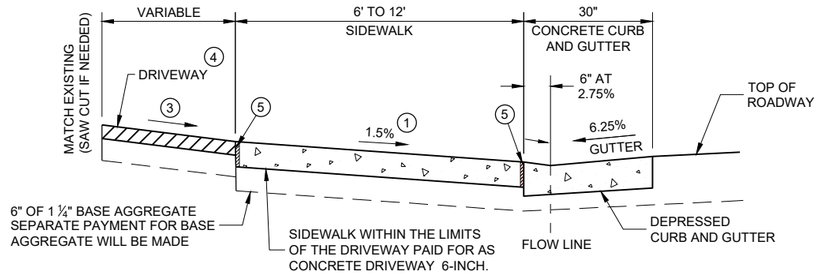
SDD 08D05 - 20g

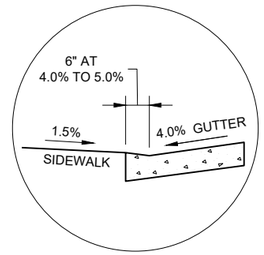
SDD 8D18 Driveway and Sidewalk Ramps Types X and Y



TYPE X
SIDEWALK ABUTS CURB AND GUTTER
TERRACE VARIES 0 TO 3 FEET



SECTION X - X



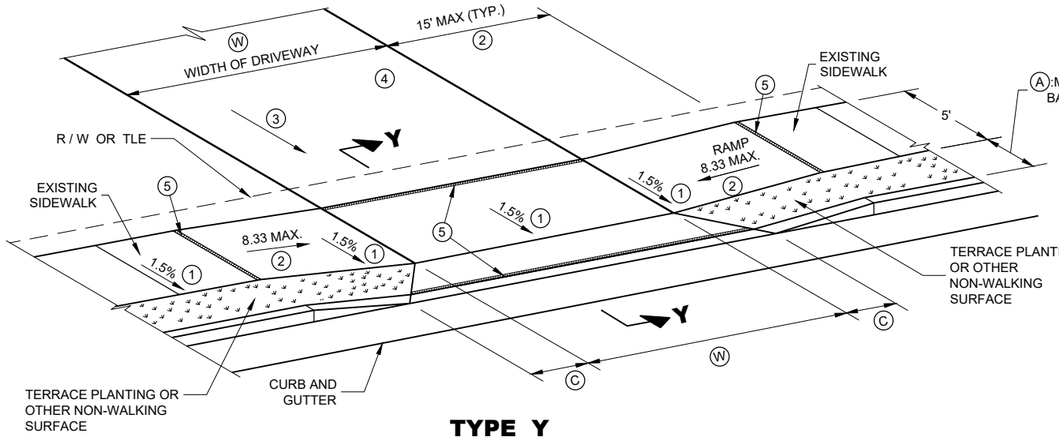
SECTION X - X
4% GUTTER SLOPE

Ⓦ: 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)

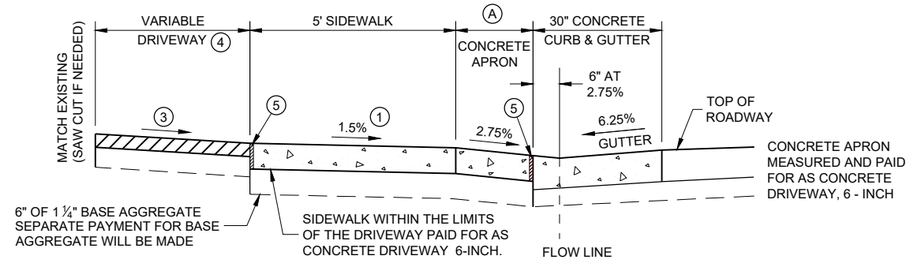
16' MIN. - 35' MAX. COMMERCIAL (CE)

TABLE Y

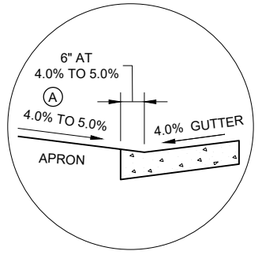
Ⓐ FEET	Ⓒ FEET
3.5'	2.0'
4.5'	3.0'
5.5'	3.5'



TYPE Y
SIDEWALK WITH NARROWER TERRACE
TERRACE VARIES 4 TO 6 FEET



NOTE: SIDEWALK MY BE DEPRESSED IN DRIVEWAY AREAS



SECTION Y - Y
4% GUTTER SLOPE

SECTION Y - Y
DRIVEWAY DETAIL WITH CONCRETE CURB AND GUTTER
(URBAN AND SUBURBAN)

GENERAL NOTES

PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.

Ⓦ IS SHOWN ON PLAN AND PROFILE SHEETS.

OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.

① CONSTRUCTION TOLERANCE OF 0.5%± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

② THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY. SLOPE SIDEWALK RAMP TOWARD APRON AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

③ DRIVEWAY SLOPES: DESIRABLE MAXIMUM
10.5% UP AWAY FROM SIDEWALK (SAG)
8.5% DOWN AWAY FROM SIDEWALK (CREST)
ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG

④ DRIVEWAY TYPES
- 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
- 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
- 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES.)

⑤ ½" EXPANSION JOINT FILLER

DRIVEWAY AND SIDEWALK RAMPS TYPES X AND Y

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022
DATE

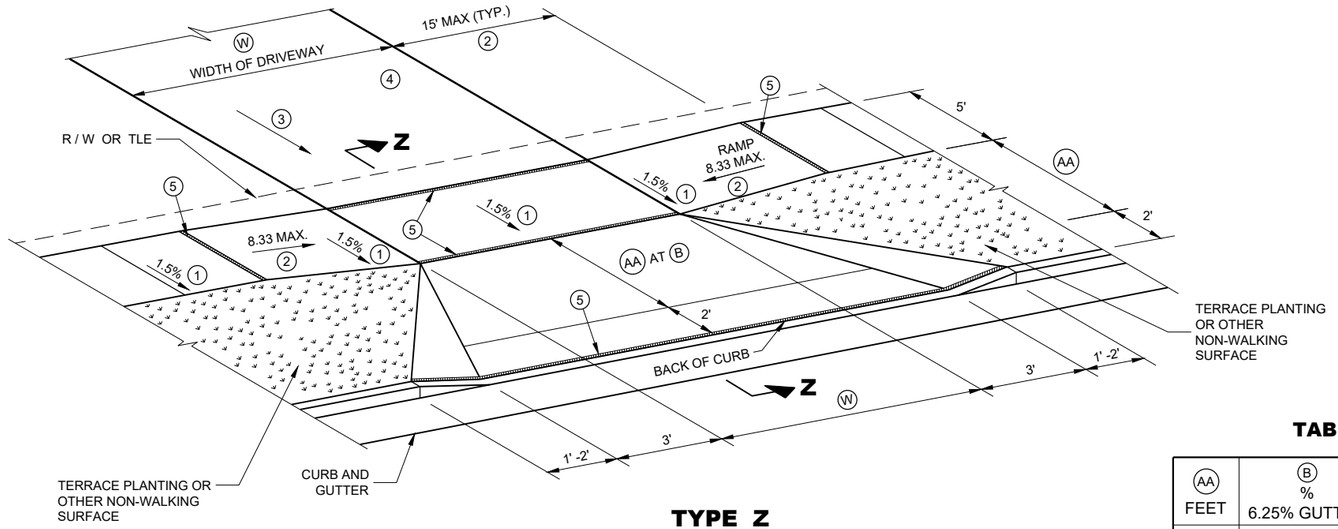
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

SDD 08D18 - 03

SDD 08D18 - 03

SDD 08D19 Driveway and Sidewalk Ramps Type Z



TYPE Z
SIDEWALK WITH WIDER TERRACE
TERRACE VARIES 7 TO 12 FEET

GENERAL NOTES

PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.

(W) IS SHOWN ON PLAN AND PROFILE SHEETS.

OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.

(1) CONSTRUCTION TOLERANCE OF 0.5%± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

(2) THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY.

(3) DRIVEWAY SLOPES: DESIRABLE MAXIMUM
- 10.5% UP AWAY FROM SIDEWALK (SAG)
- 8.5% DOWN AWAY FROM SIDEWALK (CREST)
- ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG

(4) DRIVEWAY TYPES
- 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
- 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
- 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES.)

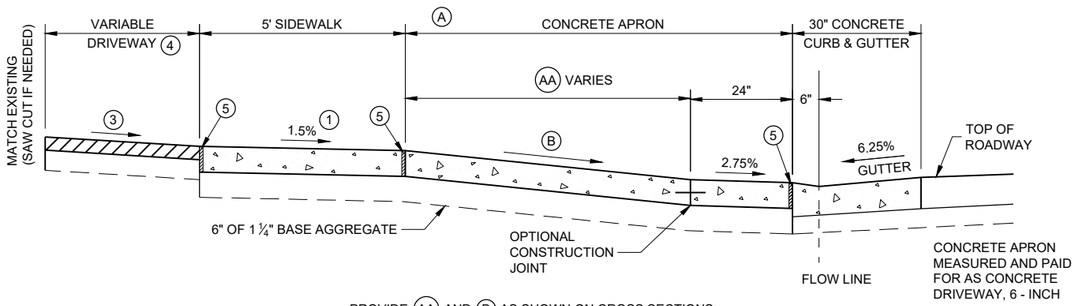
(5) ½" EXPANSION JOINT FILLER.

TABLE Z

(AA) FEET	(B) % 6.25% GUTTER	(B) % 4% GUTTER
4.5'	11.5%	9% TO 11.5%
5.5'	9% TO 11.5%	8% TO 11.5%
6.5'	8% TO 11.5%	6% TO 11.5%
7.5'	7% TO 11.5%	6% TO 11.5%
8.5'	6% TO 11.5%	5% TO 11.5%
9.5'	5% TO 11.5%	4% TO 11.5%

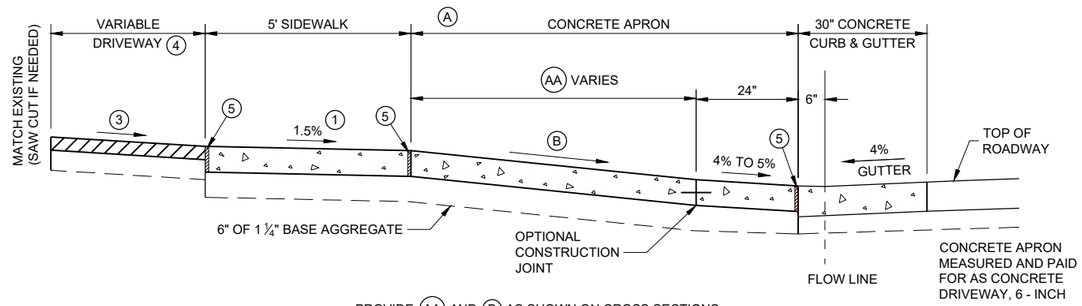
(W): 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)

16' MIN. - 35' MAX. COMMERCIAL (CE)



PROVIDE (AA) AND (B) AS SHOWN ON CROSS SECTIONS.

6.25% GUTTER SLOPE



PROVIDE (AA) AND (B) AS SHOWN ON CROSS SECTIONS.

4% GUTTER SLOPE

NOTE: SIDEWALK MY BE DEPRESSED IN DRIVEWAY AREAS FOR (B) VALUES NOT SHOWN IN TABLE Z.

SIDEWALK WITHIN THE LIMITS OF THE DRIVEWAY PAID FOR AS CONCRETE DRIVEWAY 6-INCH.

SEPARATE PAYMENT FOR BASE AGGREGATE WILL BE MADE.

SECTION Z - Z

DRIVEWAY DETAIL WITH CONCRETE CURB AND GUTTER

(URBAN AND SUBURBAN)

DRIVEWAY AND SIDEWALK RAMPS TYPE Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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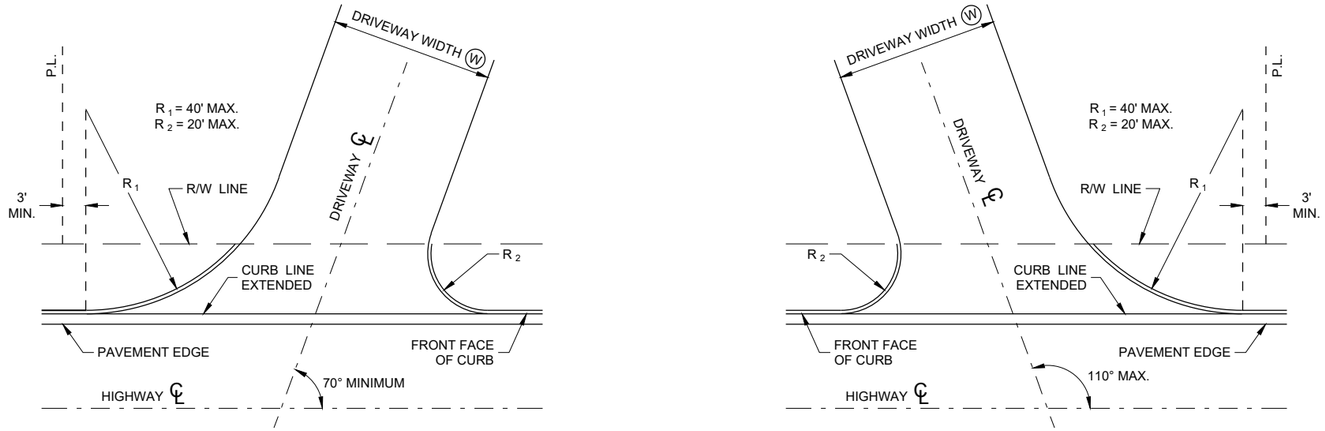
SDD 08D19 - 03

SDD 08D20 Driveways with Curb and Gutter Returns



SKEWED DRIVEWAY DETAILS
(COMMERCIAL AND NON-COMMERCIAL)
SIDEWALK NOT SHOWN

GENERAL NOTES

A MAXIMUM RADIUS OF 10 FEET SHALL BE USED FOR NON-COMMERCIAL PRIVATE ENTRANCES. RADII FOR COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER BASED ON TRAFFIC AND DRIVEWAY PERMIT RESTRICTIONS.

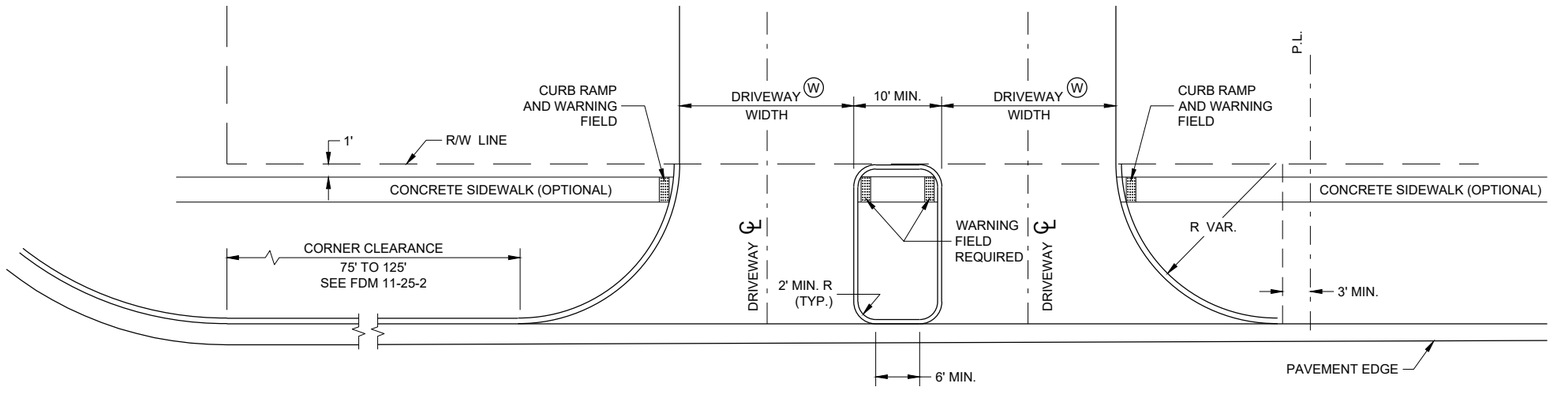
THE MINIMUM ANGLE OF INTERSECTION BETWEEN THE DRIVEWAY AND HIGHWAY CENTERLINES SHALL BE 70°.

ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY R/W.

NO DRIVEWAY SHALL BE BUILT WITHIN 3 FEET OF THE PROPERTY LINE EXCEPT FOR EXISTING JOINT DRIVEWAY SHARED BY TWO OWNERS.

(W): 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)

16' MIN. - 35' MAX. COMMERCIAL (CE)



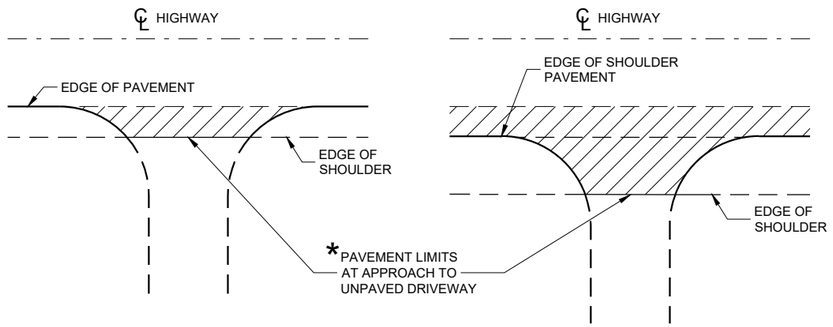
DRIVEWAY LOCATION AND SPACING DETAILS
SIDEWALK SHOWN

DRIVEWAYS WITH CURB AND GUTTER RETURNS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT ENGINEER

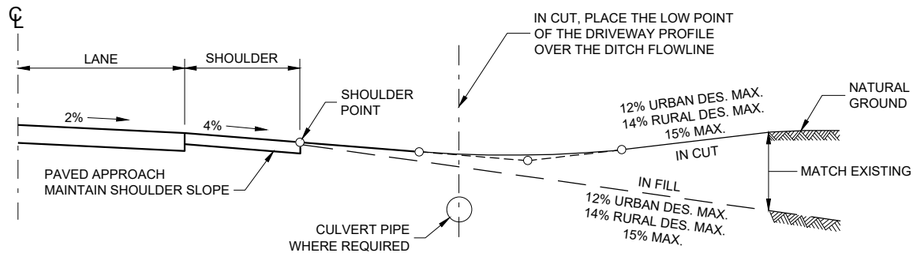
FHWA



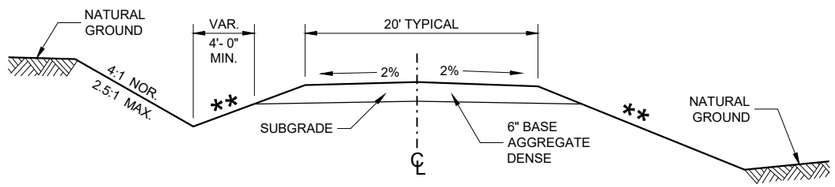
PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)



TYPICAL DRIVEWAY PROFILES

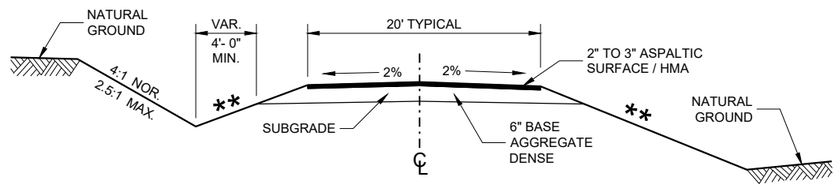


IN CUT IN FILL

TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE AGGREGATE SURFACE

** SLOPE CAN VARY WITH SPEED. SEE 11-45-30.6.2

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥ 35 TO < 60	6:1
≥60	10:1



IN CUT IN FILL

TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE ASPHALTIC SURFACE

DRIVEWAYS WITHOUT CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

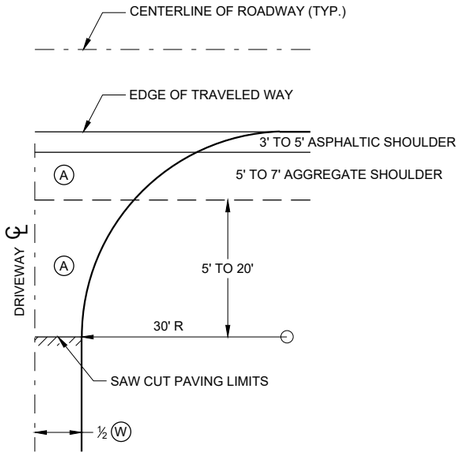
FHWA

6
SDD 08D21 - 01

SDD 08D22 Driveways without Curb and Gutter Resurfacing Projects Rural

GENERAL NOTES

(1) DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

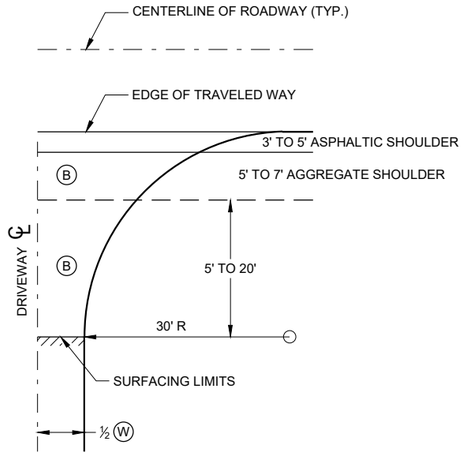


PLAN VIEW

Ⓐ : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)

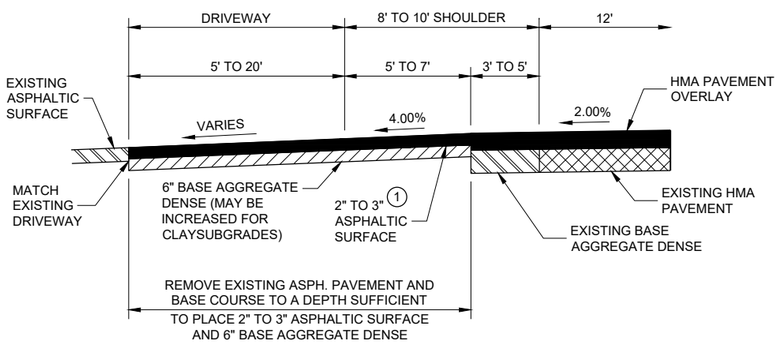
Ⓑ : PAID FOR AS BASE AGGREGATE DENSE 1 ¼" (TON)

Ⓦ : DRIVEWAY WIDTH 16' MIN. - 24' MAX.



PLAN VIEW

HALF SECTION

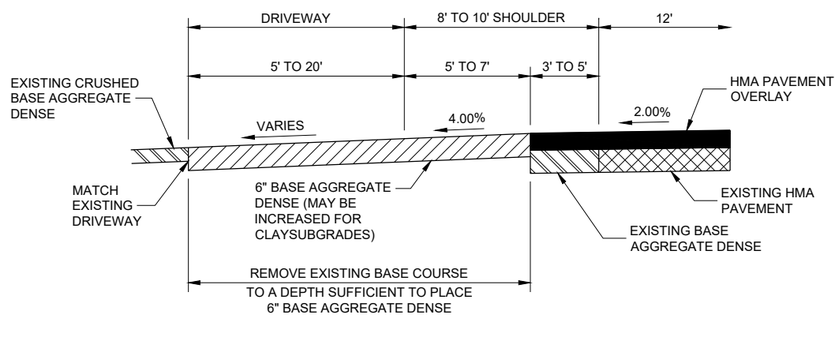


PROFILE VIEW

RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS

PLAN VIEW

HALF SECTION



PROFILE VIEW

RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

DRIVEWAYS WITHOUT CURB AND GUTTER RESURFACING PROJECTS RURAL

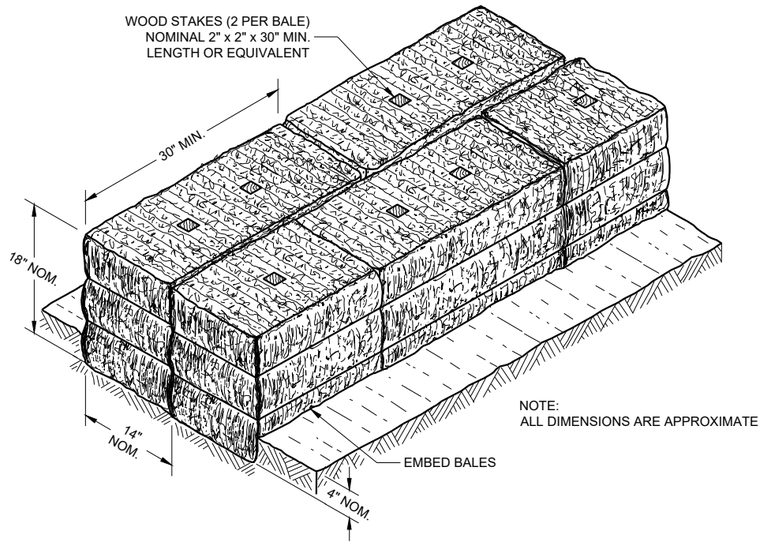
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2016
DATE

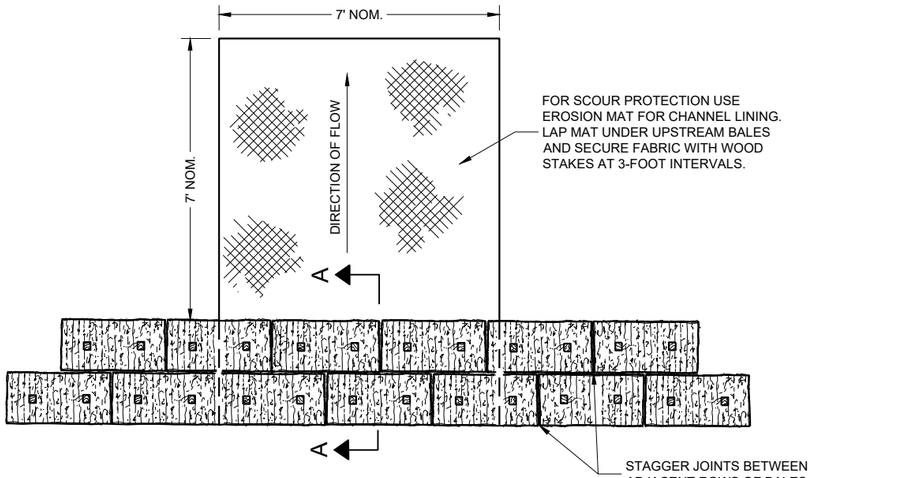
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

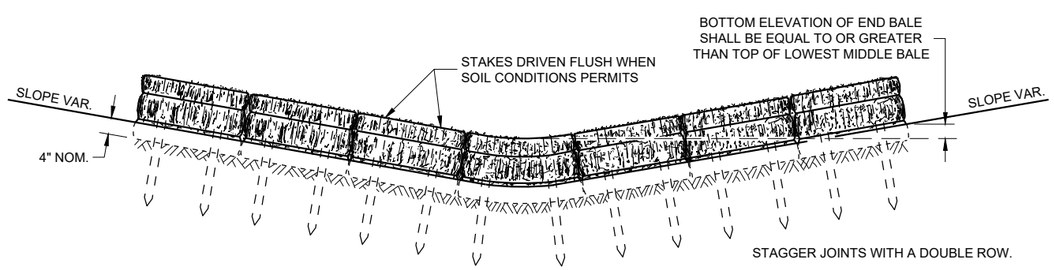
SDD 08E08 Typical Installations of Erosion Bales / Temporary Ditch Checks



SECTION A - A



PLAN VIEW



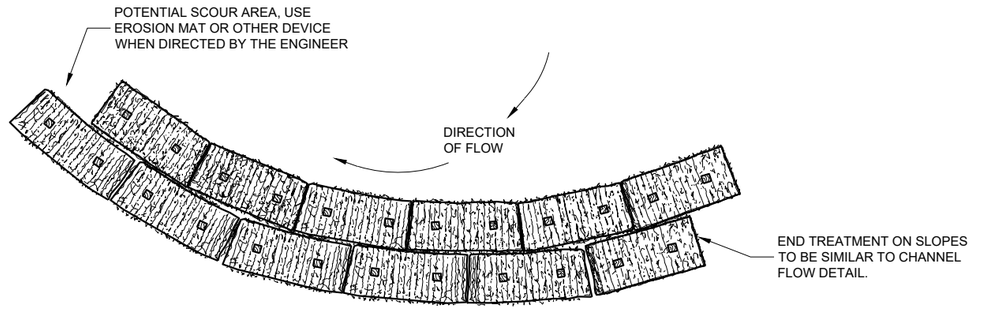
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

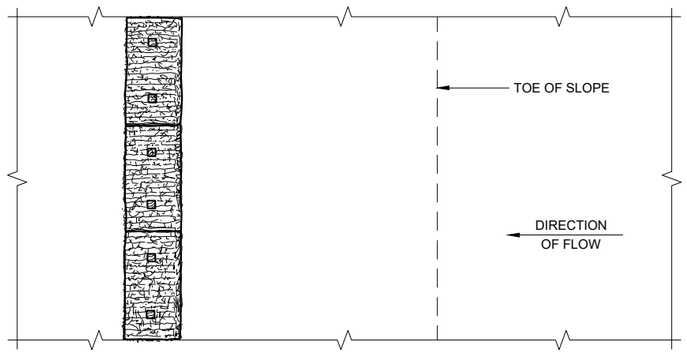
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) TEMPORARY DITCH CHECKS, EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

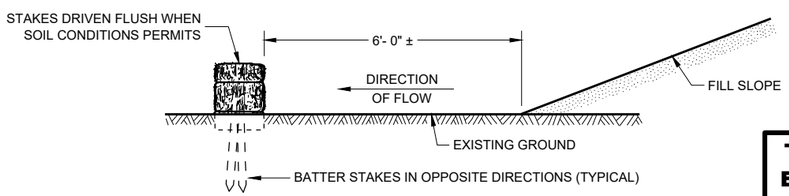


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN ELEVATION



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES/TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/4/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6

SDD 08E08 - 03

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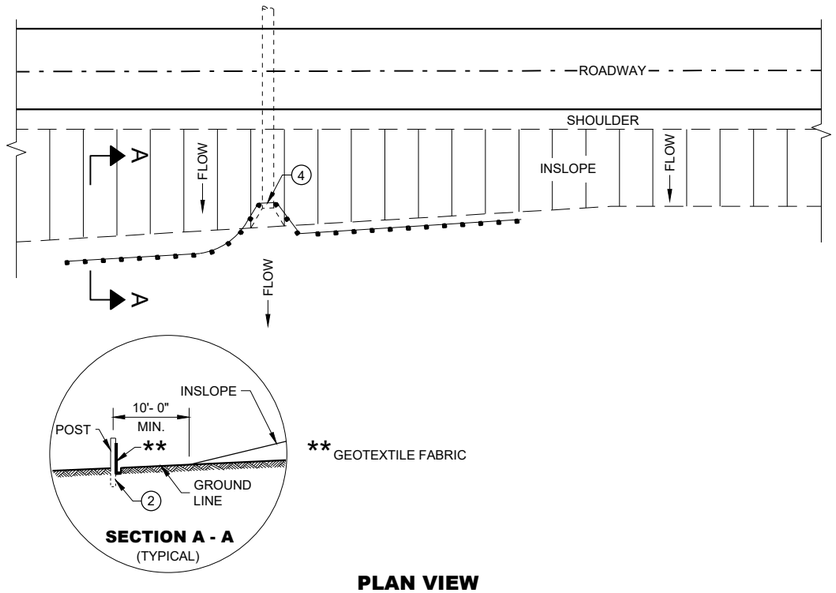
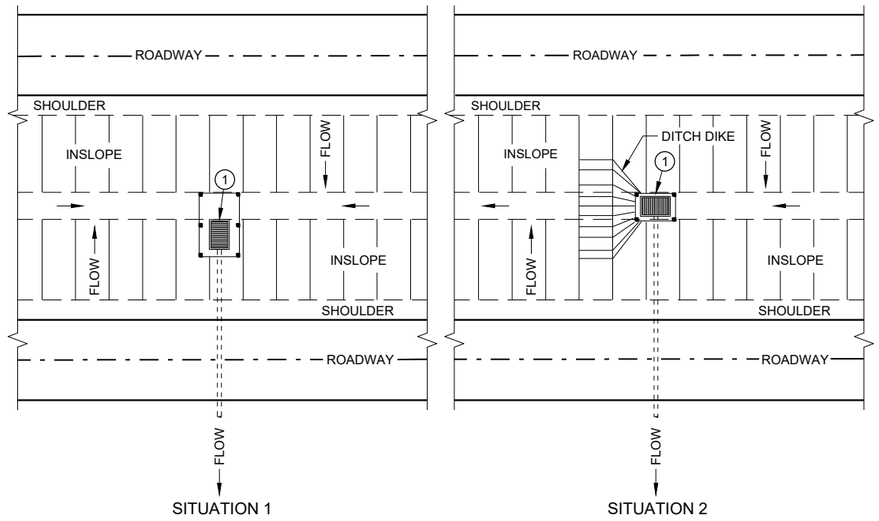
SDD 08E08 - 03



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



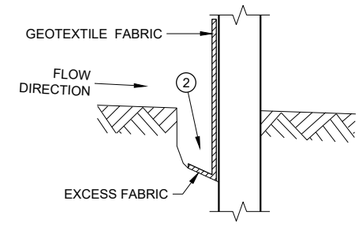
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

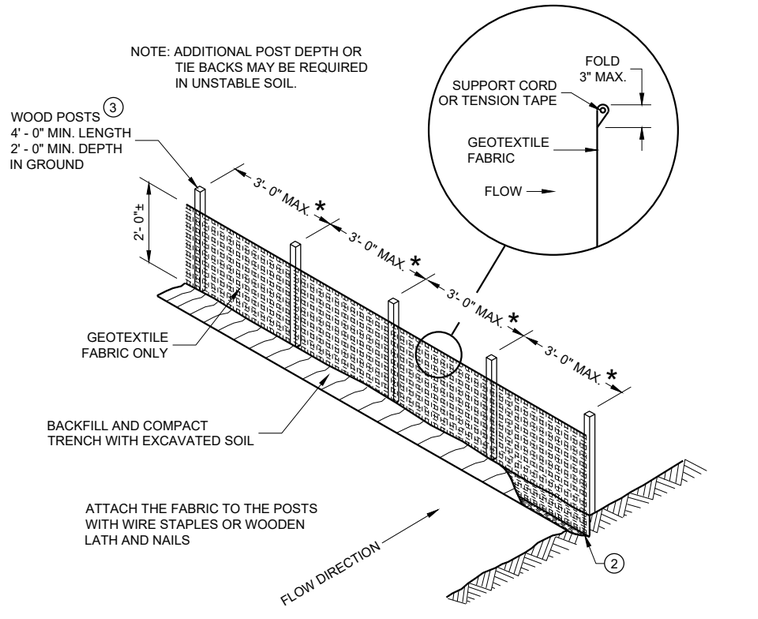
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

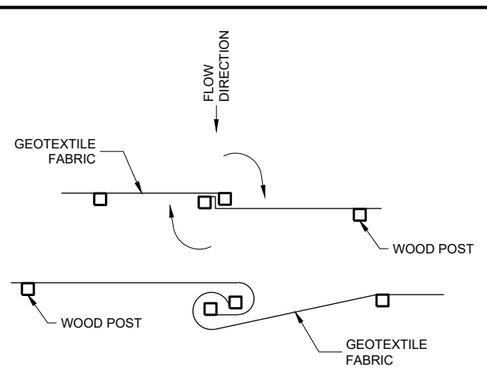
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE AND 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 ⅛" X 1 ⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



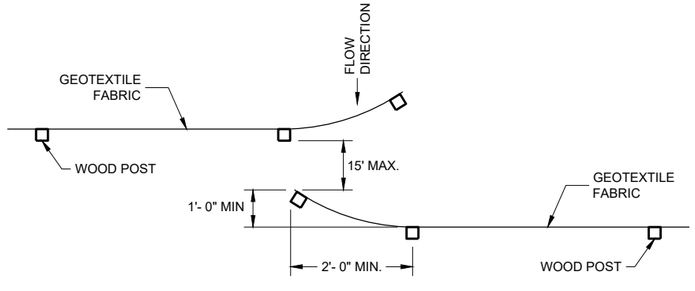
TRENCH DETAIL



SILT FENCE

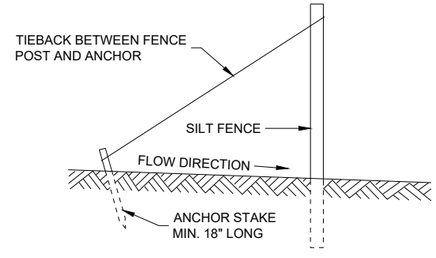


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

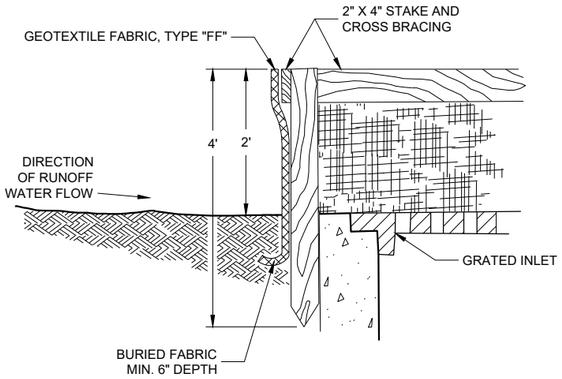
SILT FENCE

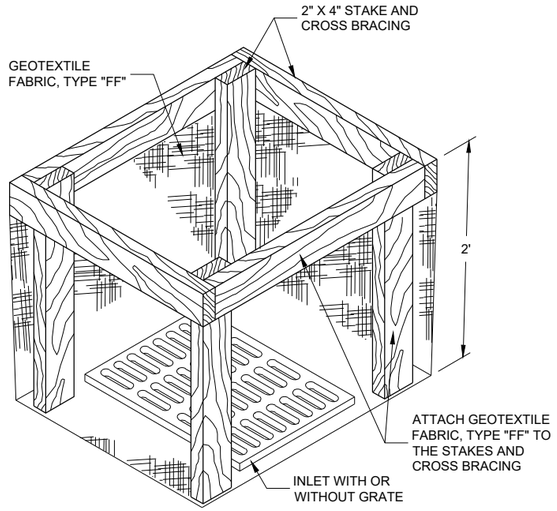
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/29/05 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

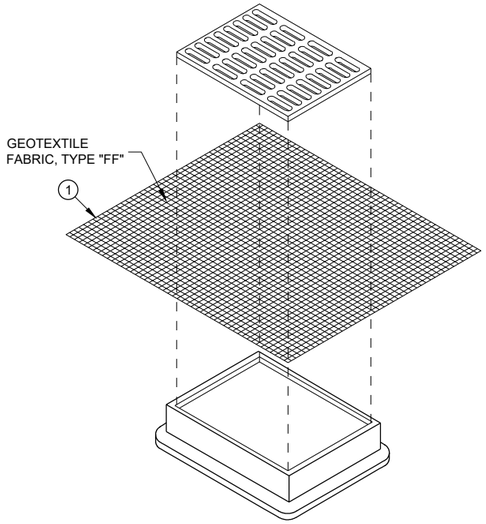
6
SDD 08E09 - 06

SDD 08E10 Inlet Protection, Types A, B, C and D



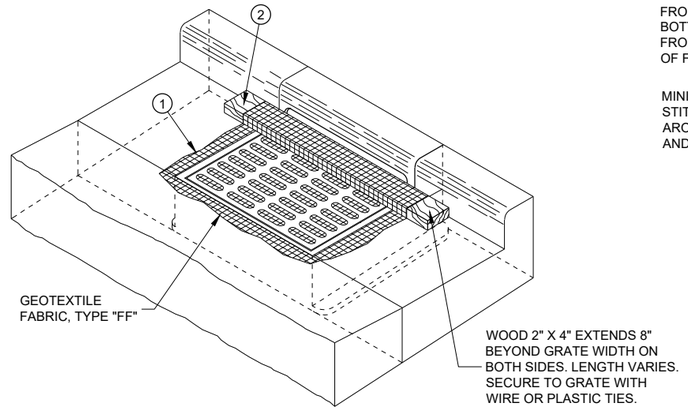


INLET PROTECTION, TYPE "A"

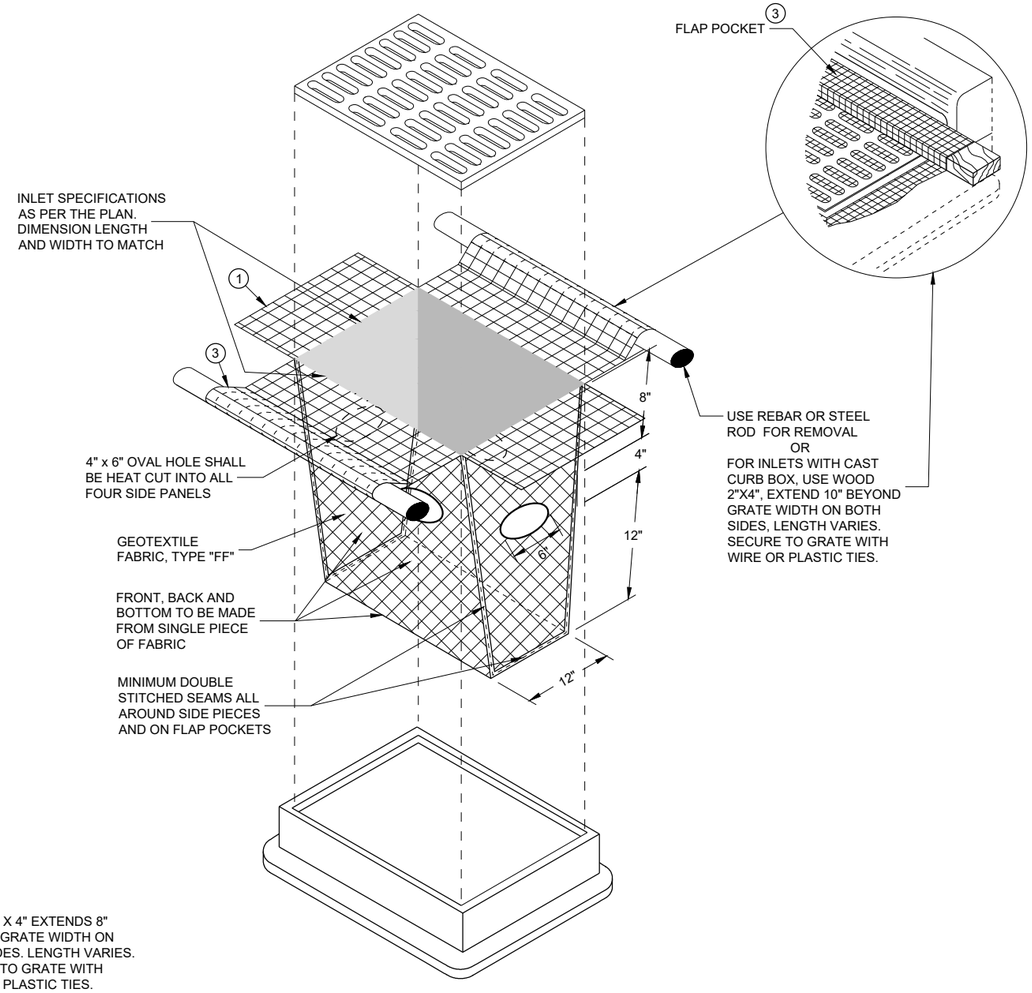


INLET PROTECTION, TYPE "B" (WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE "C" (WITH CURB BOX)



INLET PROTECTION, TYPE "D"

(CAN BE INSTALLED IN ANY INLET WITH OR WITHOUTA CURB BOX AS PER NOTE (2))

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

(1) FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

(2) FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

(3) FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPES B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION TYPES A, B, C AND D

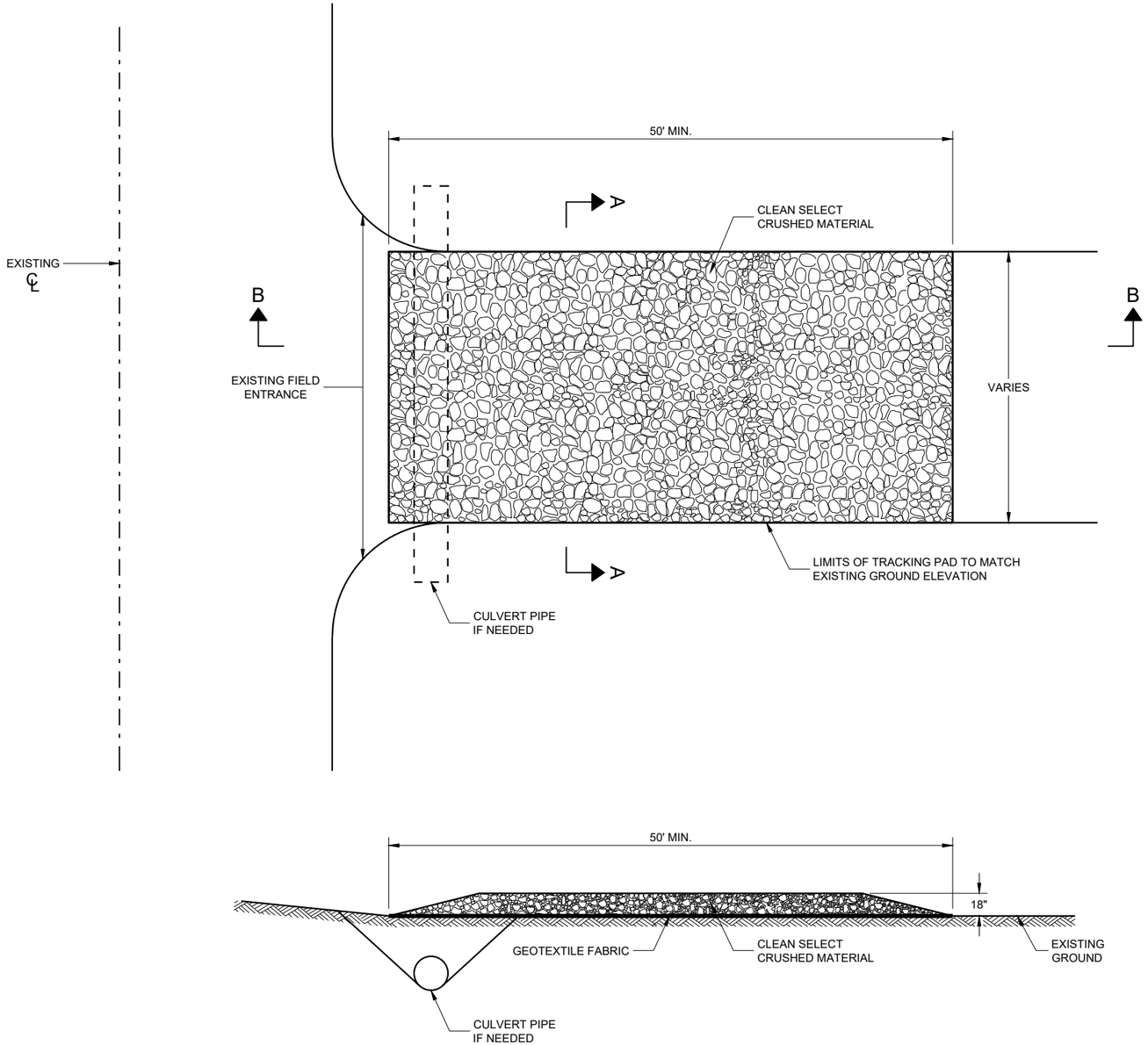
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 — DATE
/S/ Beth Cannestra — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6
SDD 08E10 - 02

SDD 08E14 Tracking Pad



SECTION B - B

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

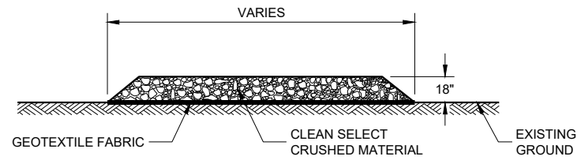
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A - A

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

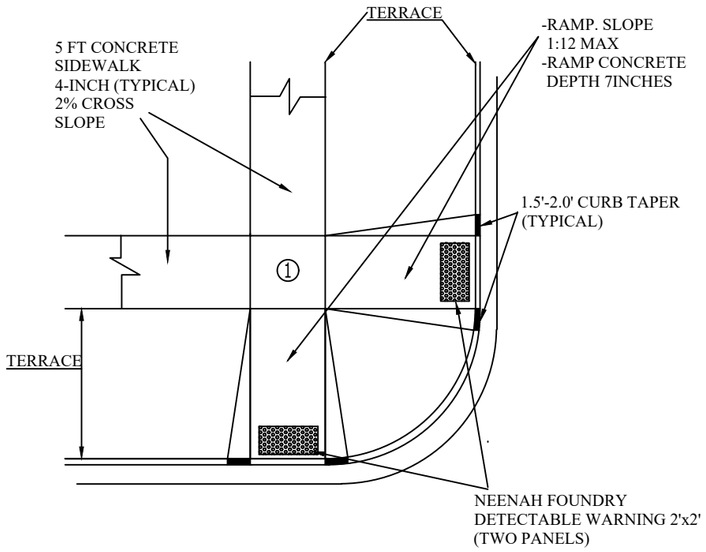
FHWA

6

SDD 08E14 - 01

6

SDD 08E14 - 01



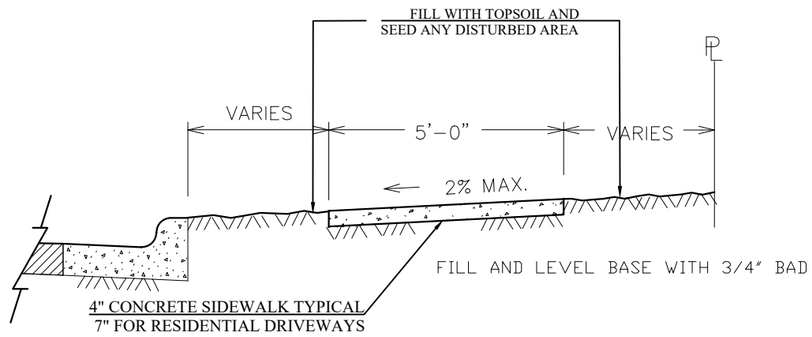
① LANDING NOTES
PROVIDE LANDING AT TOP OF RAMP WITH NO MORE THAN 2% SLOPE IN ANY DIRECTION. MINIMUM LANDING SIZE 5'x5', CONCRETE DEPTH SHALL BE 4 INCHES.

PED-RAMP OVERHEAD DETAIL

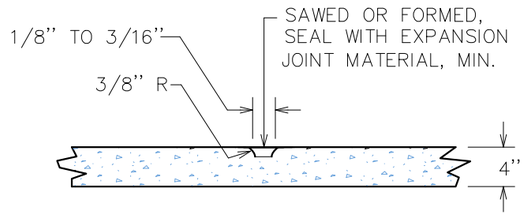
(NO SCALE)

PEDESTRIAN RAMP REPLACEMENT NOTES:

ALL PEDESTRIAN RAMPS ON PROJECT WILL BE REPLACED TO BRING THEM TO ADA SPECIFICATIONS.

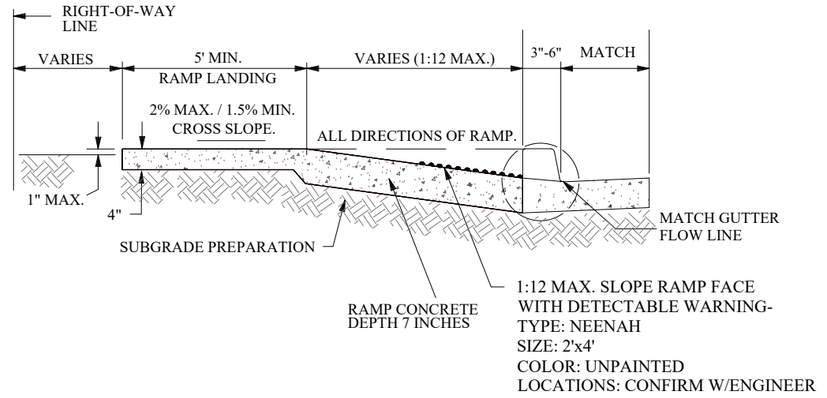


TYPICAL CONCRETE SIDEWALK SECTION



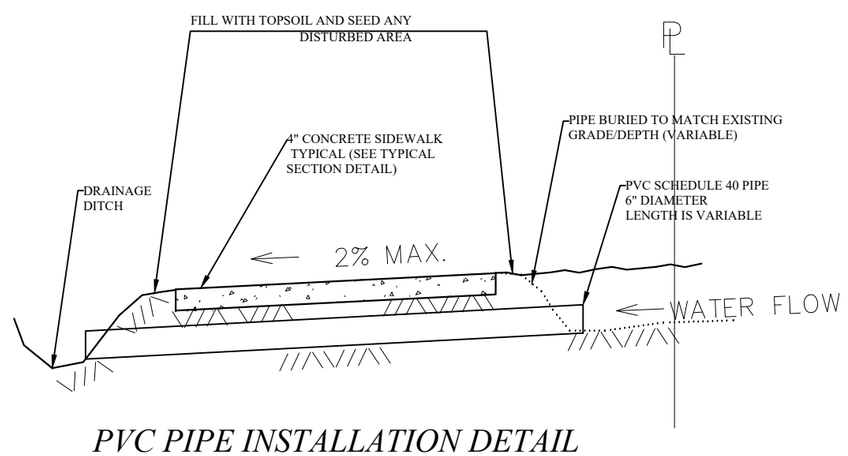
SIDEWALK CONTRACTION JOINT

(NO SCALE)



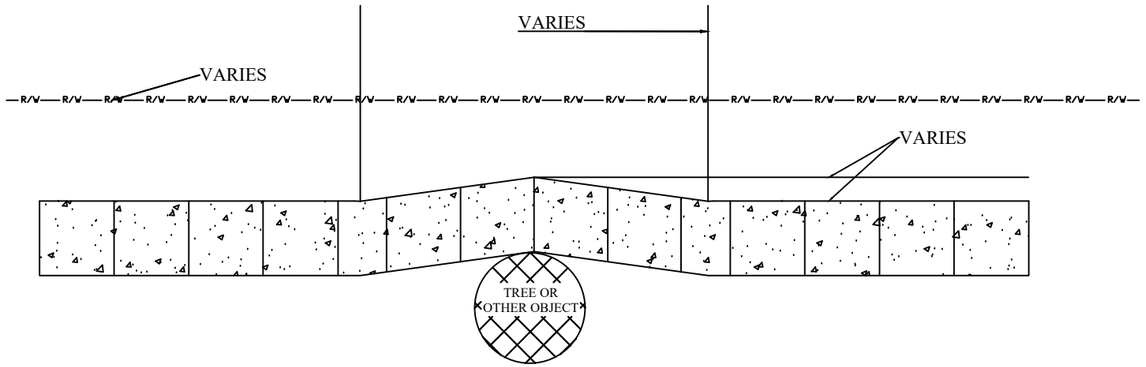
PED-RAMP CROSS-SECTION

(NO SCALE)



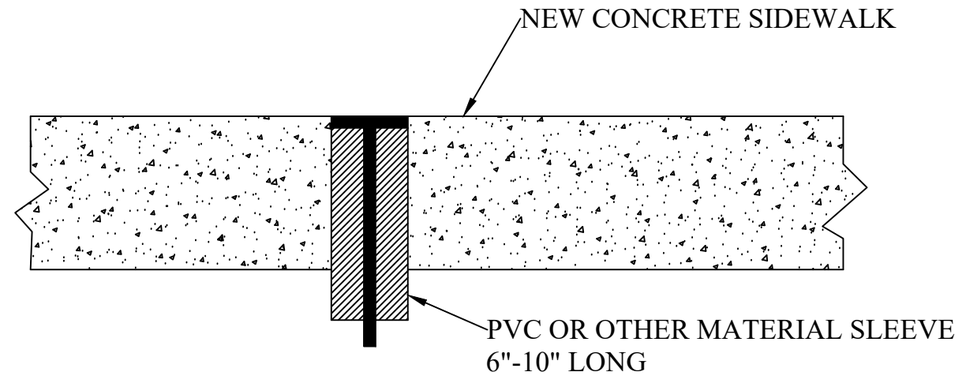
PVC PIPE INSTALLATION DETAIL (VARIABLE LENGTH)

(NO SCALE)



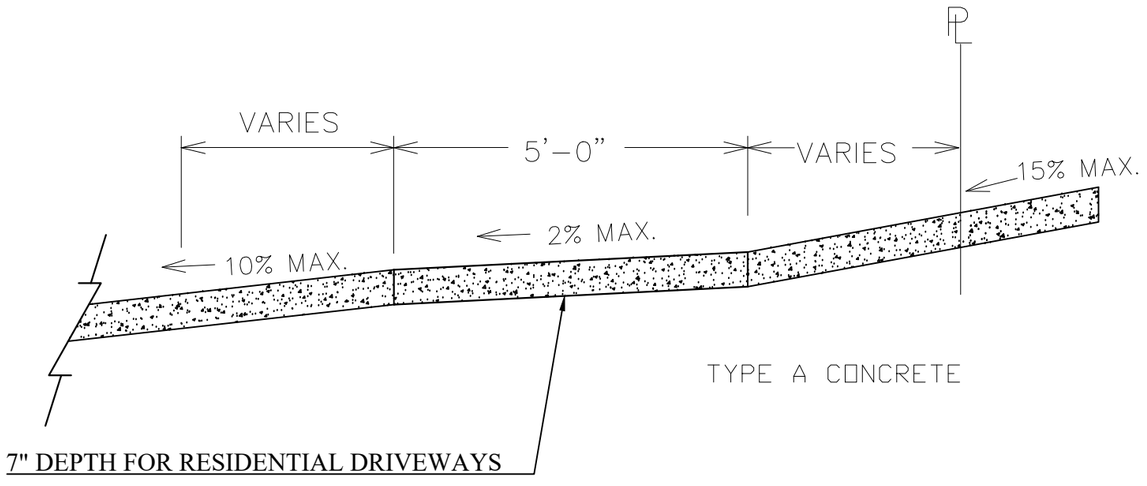
ALIGNMENT TO BE APPROVED BY THE ENGINEER

SIDEWALK BUMPOUT DETAIL



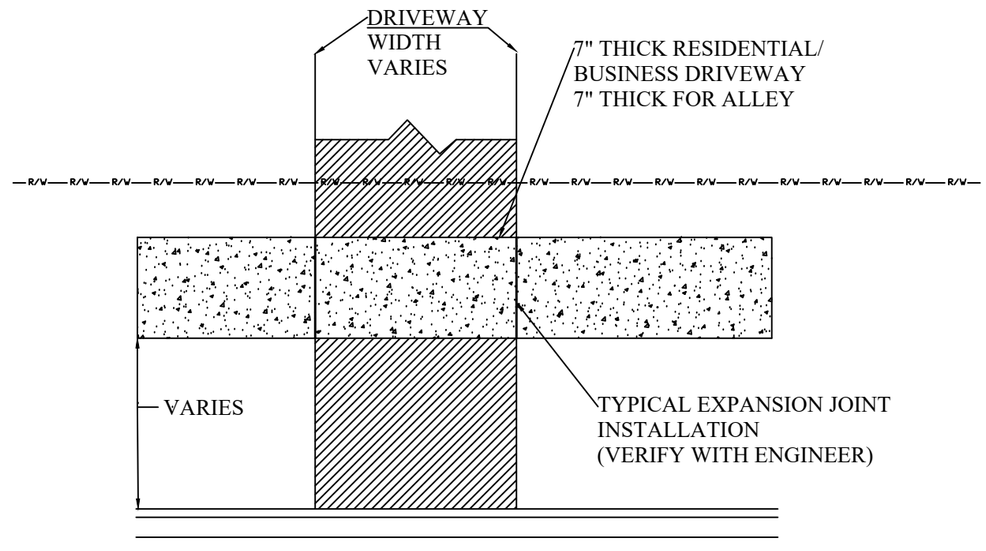
WATER STOPBOX REPAIR DETAIL

(NO SCALE)



TYPICAL CONCRETE DRIVEWAY SECTION

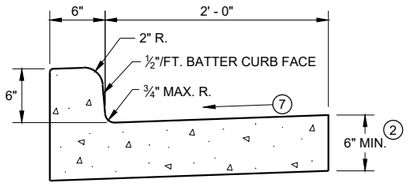
(NO SCALE)



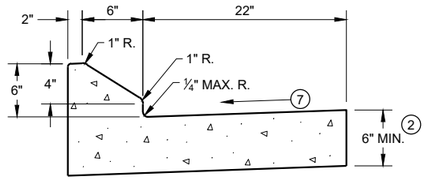
SIDEWALK THROUGH DRIVEWAY OR ALLEY

(NO SCALE)

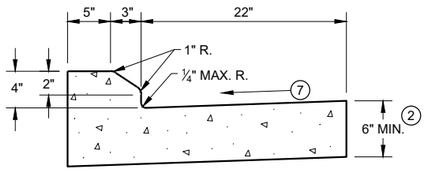
SDD 08D01-a Concrete Curb and Gutter



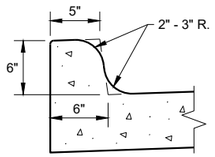
TYPES A (1) & D



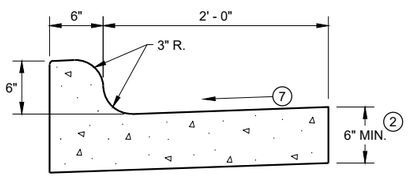
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

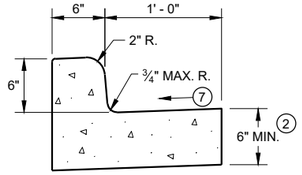


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



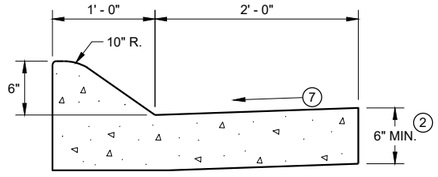
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"



TYPES A (1) & D

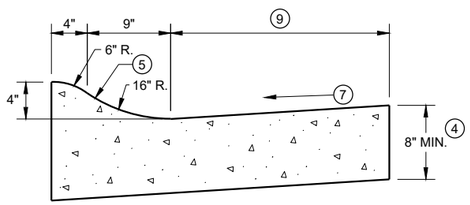
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A (1) & D

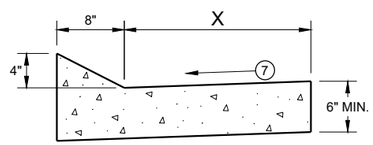
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

TBT & TBTT	X
30"	22"
36"	28"

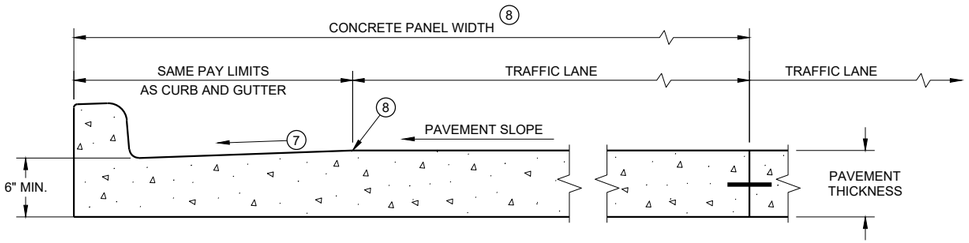


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

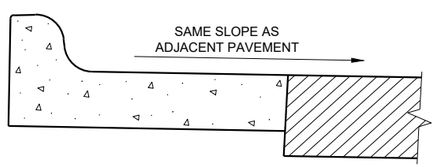
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER (6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

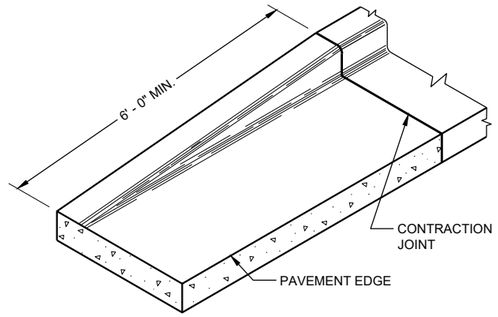
(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

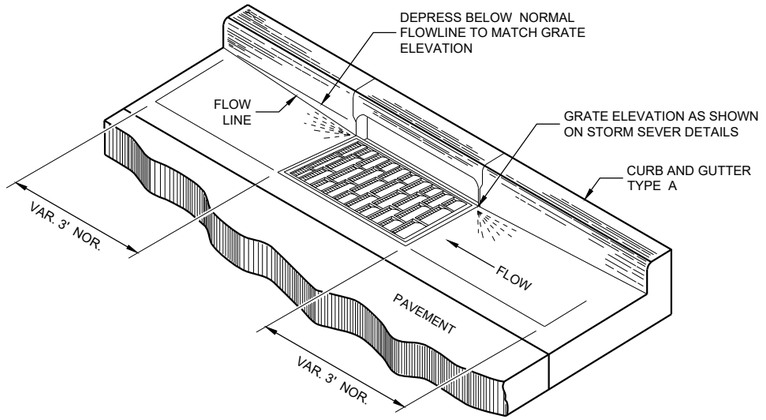
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D01-b Concrete Gutter, Ties, and Curb and Gutter Applications



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

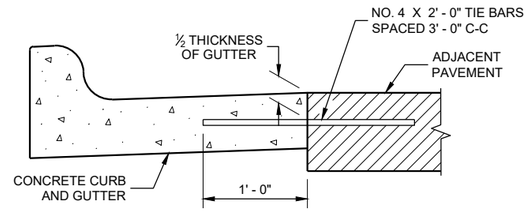
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

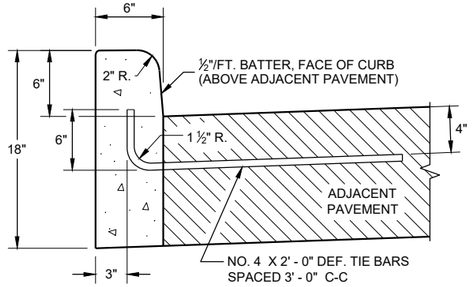
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

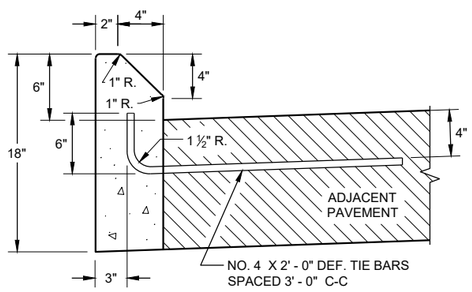
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

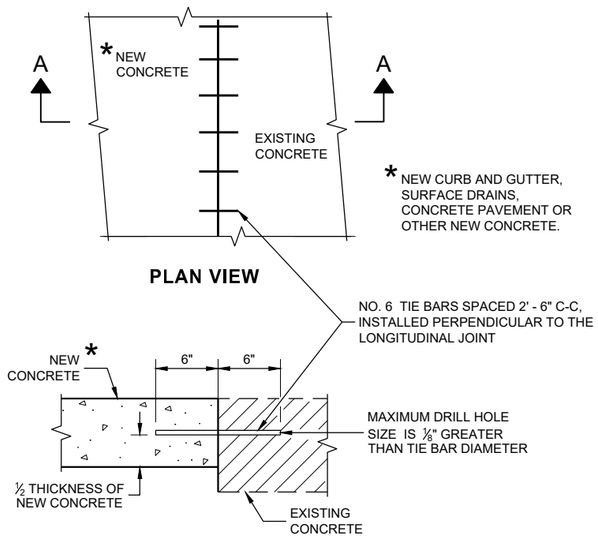


TYPES A (1) & D



TYPES G (1) & J

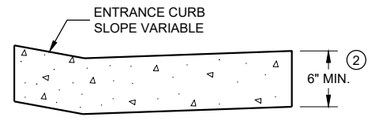
CONCRETE CURB



PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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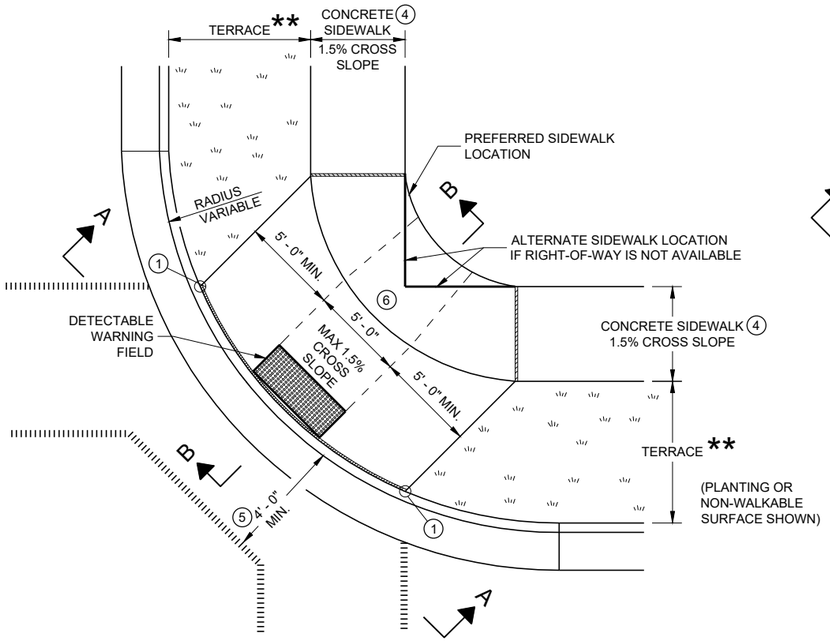
SDD 08D01 - 22b

6

SDD 08D01 - 22b

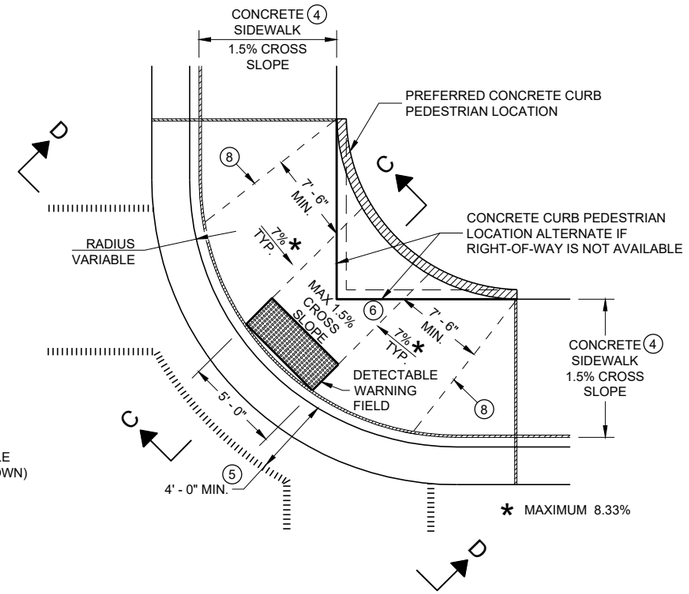
SDD 08D05-a: Curb Ramps Types 1 and 1-A



PLAN VIEW

CURB RAMP TYPE 1

(CENTER OF CORNER RADIUS)



PLAN VIEW

CURB RAMP TYPE 1 - A

(NO TERRACE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FILED SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD"

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

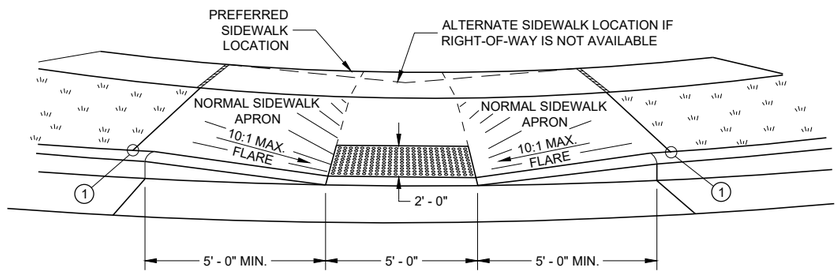
(3) MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

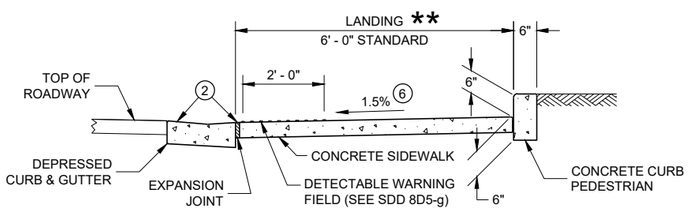
(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.



VIEW A - A FOR TYPE 1

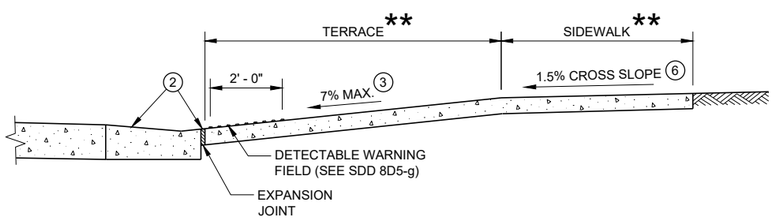


SECTION C - C FOR TYPE 1 - A

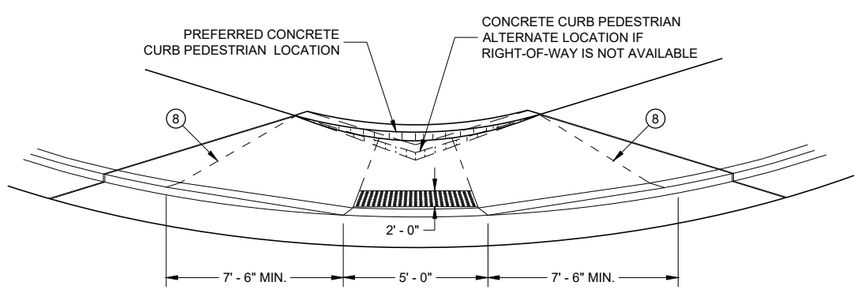
LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B - B FOR TYPE 1



VIEW D - D FOR TYPE 1 - A

CURB RAMPS TYPE 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

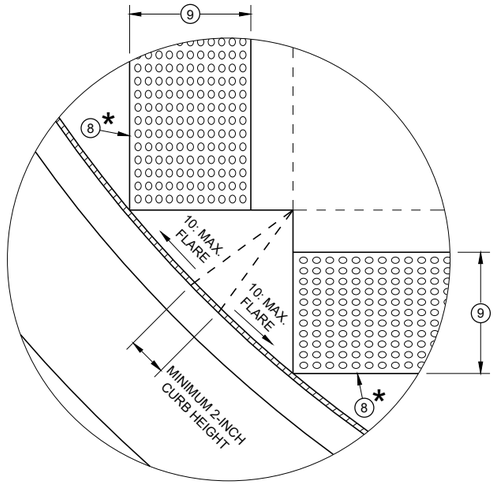
6

SDD 08D05 - 20a

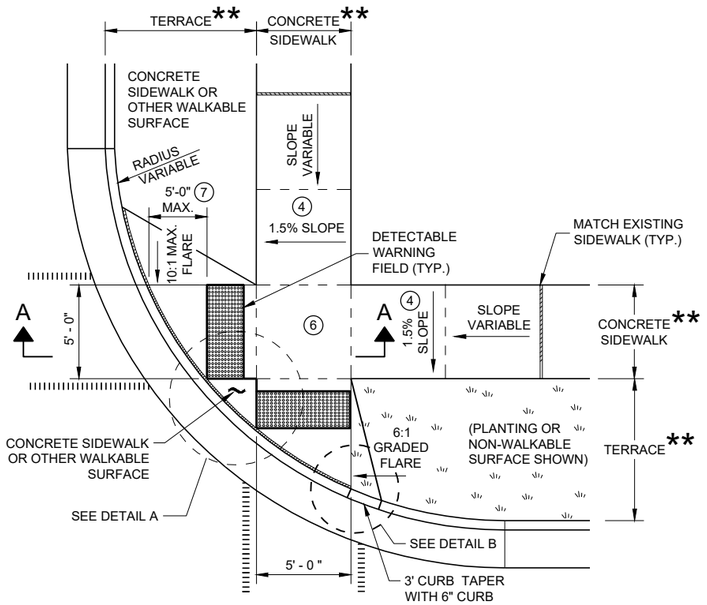
6

SDD 08D05 - 20a

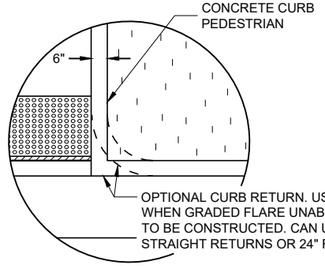
SDD 08D05-b Curb Ramps Types 2 and 3



DETAIL A



PLAN VIEW
CURB RAMP TYPE 2
(CENTER OF CORNER RADIUS)



DETAIL B

PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.

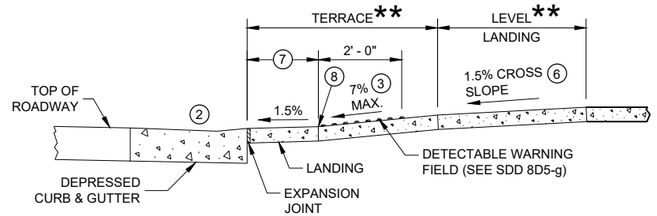
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

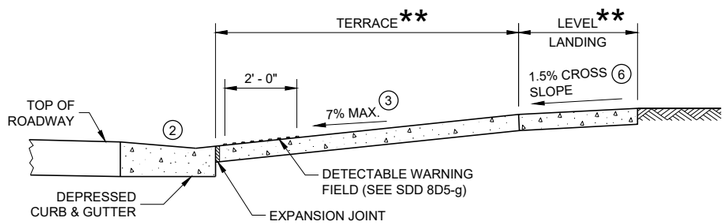
(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.



SECTION A - A FOR TYPE 2

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

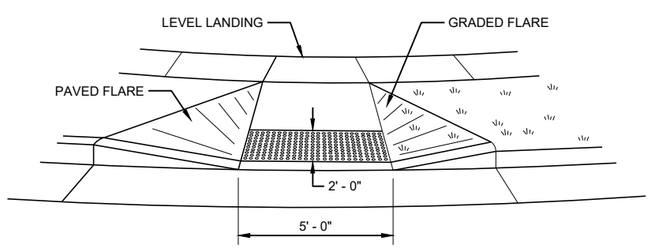
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B - B FOR TYPE 3

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



VIEW C - C FOR TYPE 3

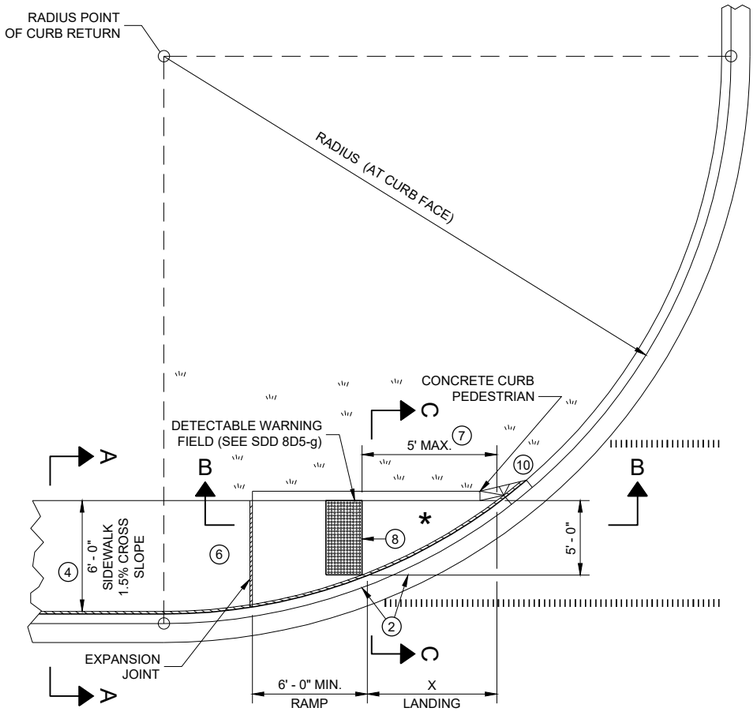
CURB RAMPS TYPE 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D05 - 20b

SDD 08D05-c Curb Ramps Types 4A and 4A1

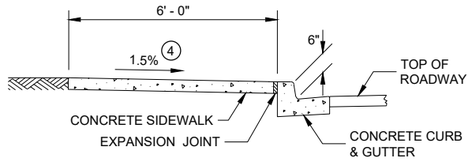


PLAN VIEW

CURB RAMP TYPE 4A

RADIUS (AT CURB FACE)	X
10 FEET	4' - 7"
15 FEET	6' - 5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A - A FOR TYPE 4A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

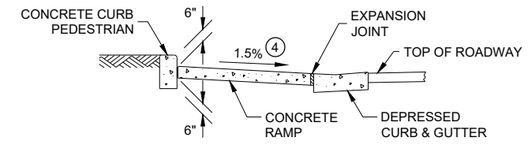
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

LEGEND

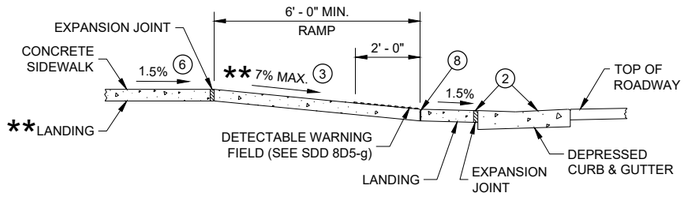
½" EXPANSION JOINT SIDEWALK

CONTRACTION JOINT SIDEWALK

PAVEMENT MARKING CROSSWALK (WHITE)



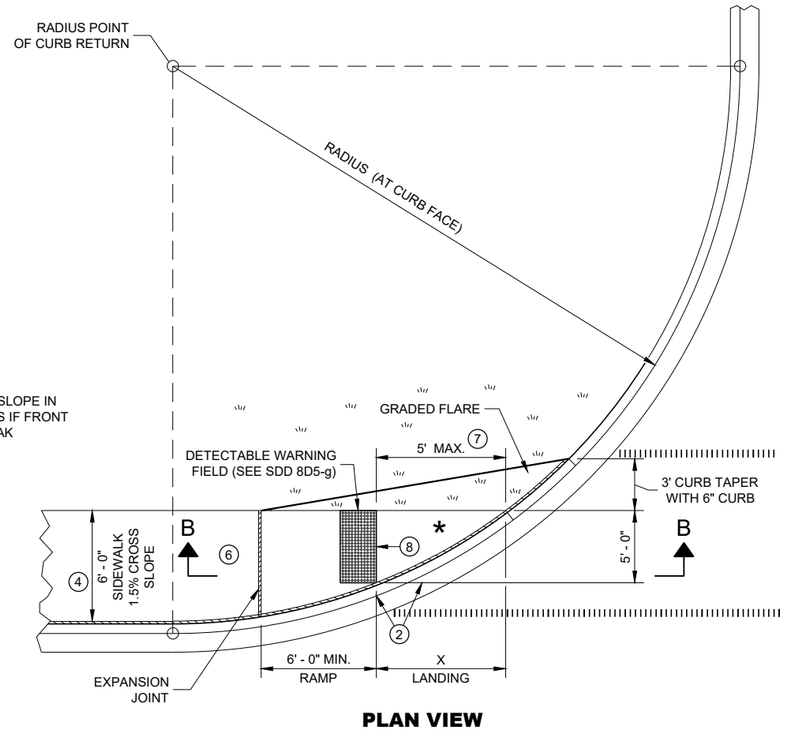
SECTION C - C FOR TYPE 4A



SECTION B - B FOR TYPE 4A AND TYPE 4A1

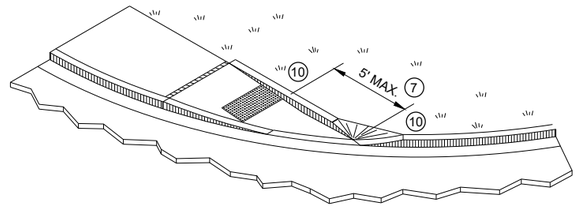
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

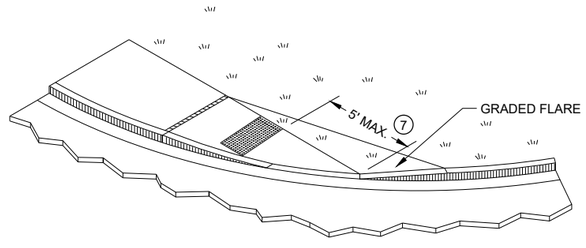


PLAN VIEW

CURB RAMP TYPE 4A1



ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

CURB RAMPS
TYPE 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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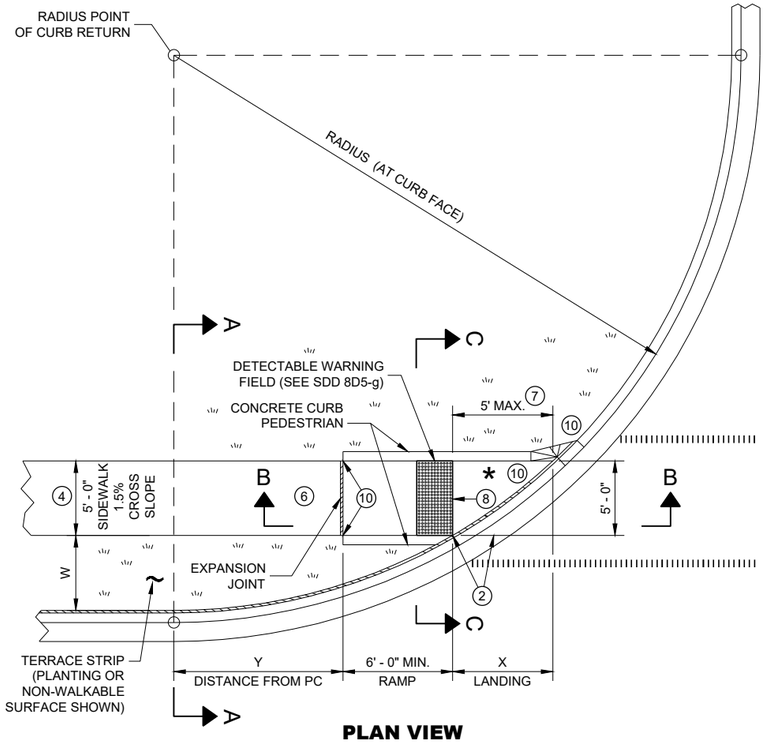
SDD 08D05 - 20c

SDD 08D05-d: Curb Ramps Types 4B and 4B1



PLAN VIEW

CURB RAMP TYPE 4B

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2' - 10 ¼"	0' - 5"	2' - 1"	1' - 4 ½"	1' - 5"	2' - 1"	0' - 10"	2' - 7 ½"	0' - 3 ¼"	3' - 0 ¼"						
15 FEET	4' - 6 ¾"	2' - 1 ¾"	3' - 9"	3' - 5 ¾"	3' - 1 ¼"	4' - 6"	2' - 6 ¾"	5' - 4 ½"	2' - 1"	6' - 1"	1' - 8"	6' - 8 ½"	1' - 3 ¼"	7' - 2 ½"	0' - 10 ¾"	7' - 7 ¼"
20 FEET	5' - 9 ¾"	3' - 6 ½"	4' - 11 ½"	5' - 1 ¾"	4' - 3 ¼"	6' - 5 ½"	3' - 8 ¾"	7' - 7"	3' - 3"	8' - 6 ½"	2' - 10"	9' - 4 ½"	2' - 5 ½"	10' - 1 ¼"	2' - 1 ¼"	10' - 9"
30 FEET			6' - 9 ¼"	7' - 11 ¼"	6' - 0 ¼"	9' - 8"	5' - 5"	11' - 1 ¾"	4' - 10 ¾"	12' - 5 ¾"	4' - 5 ½"	13' - 7 ¾"	4' - 0 ¾"	14' - 8 ½"	3' - 8 ½"	15' - 8 ¼"
40 FEET									6' - 1 ¾"	15' - 8 ½"	5' - 8"	17' - 2"	5' - 3"	18' - 5 ¾"	4' - 10 ¾"	19' - 8 ¼"
50 FEET															5' - 10 ¼"	23' - 2"

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

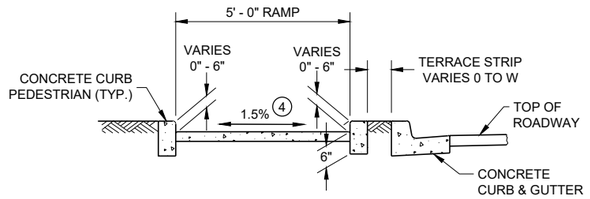
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

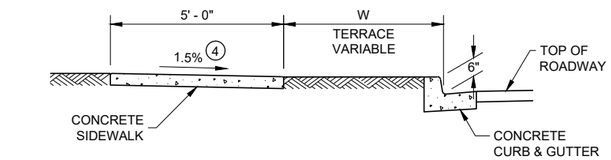
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

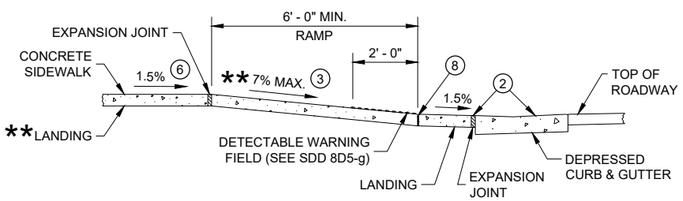
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



SECTION C - C FOR TYPE 4B



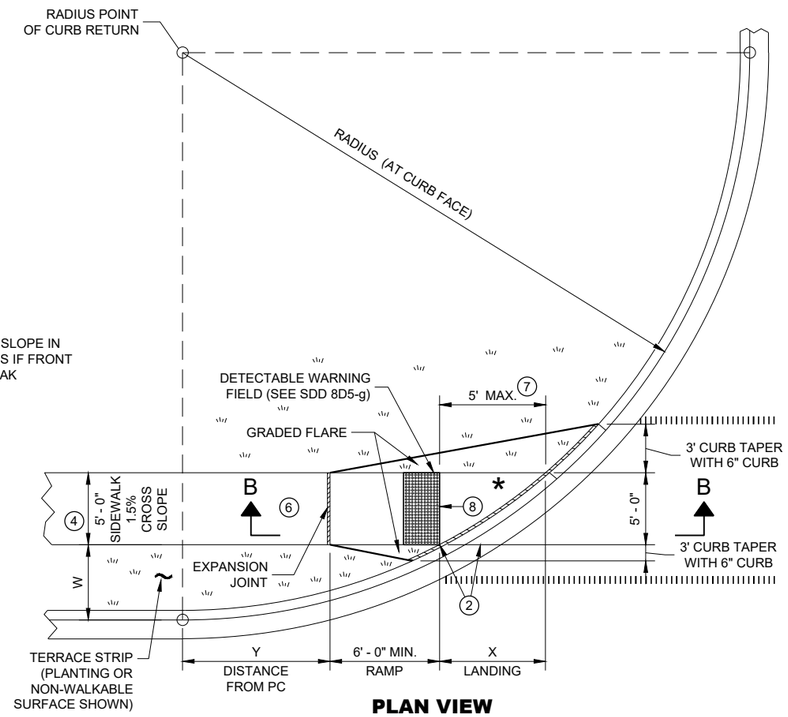
SECTION A - A FOR TYPE 4B



SECTION B - B FOR TYPE 4B AND TYPE 4B1

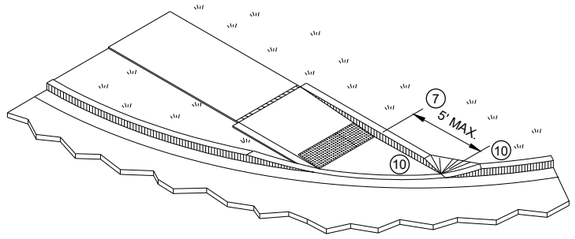
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

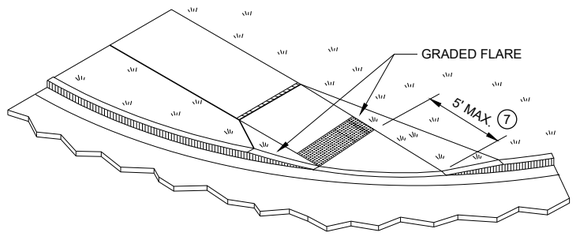


PLAN VIEW

CURB RAMP TYPE 4B1



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
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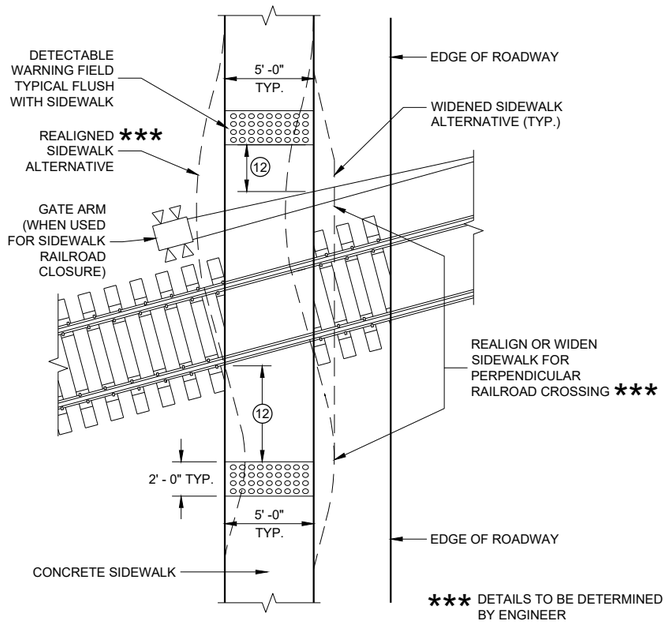
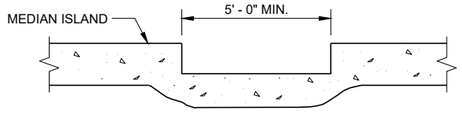
SDD 08D05-e: Curb Ramps Types 5, 6, 7A, 7B and 8

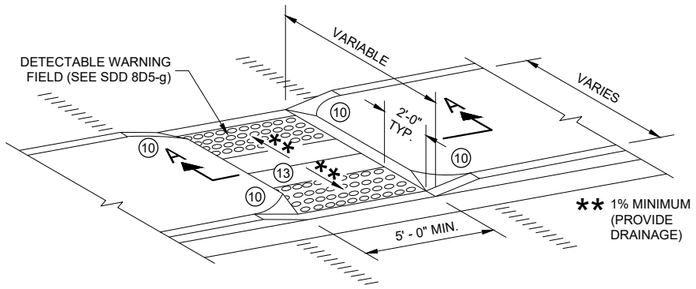


CURB RAMP TYPE 8

DETECTABLE WARNINGS AT RAILROAD CROSSING



SECTION A - A FOR TYPE 5



CURB RAMP TYPE 5

MEDIAN ISLAND NON-ELEVATED PEDESTRIAN CROSSING

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ½ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

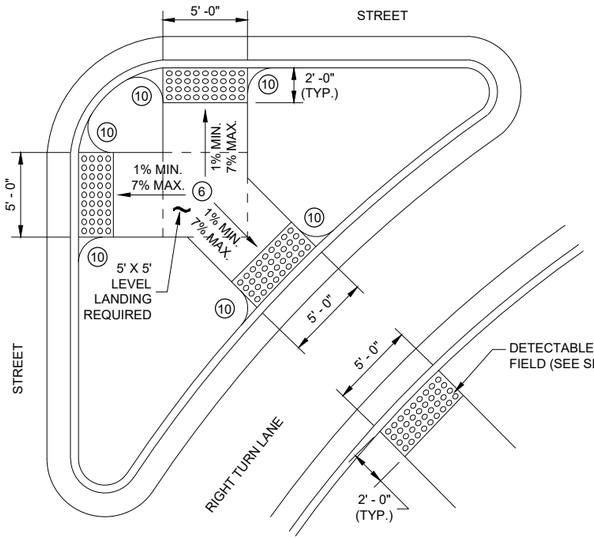
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

LEGEND

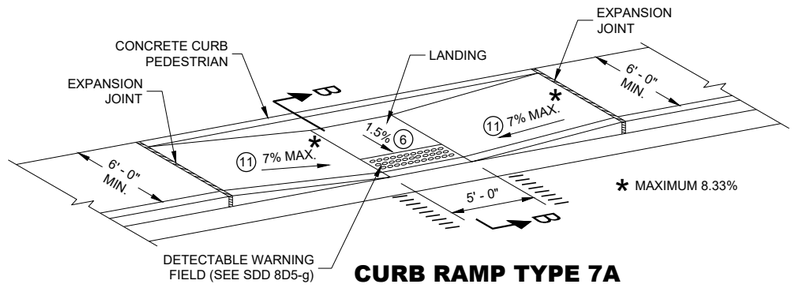
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



CURB RAMP TYPE 6

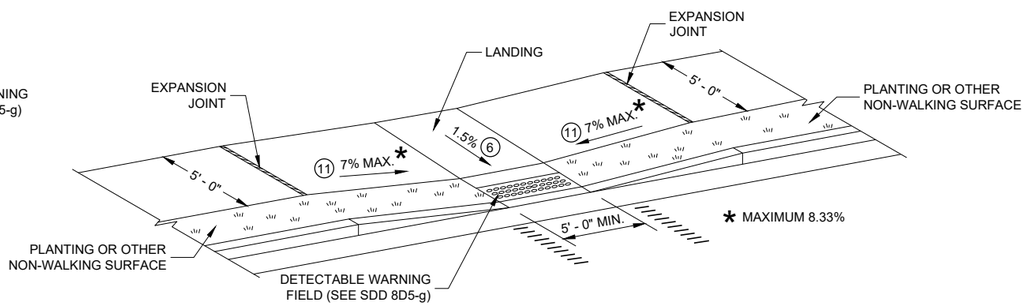
DETECTABLE WARNING AT ISLANDS

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



CURB RAMP TYPE 7A

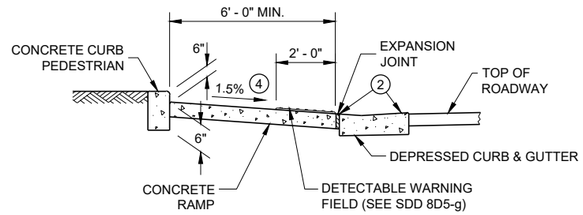
MID BLOCK CROSSING



CURB RAMP TYPE 7B

MID BLOCK CROSSING

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.



SECTION B - B FOR TYPE 7A

CURB RAMPS TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 08D05 - 20e

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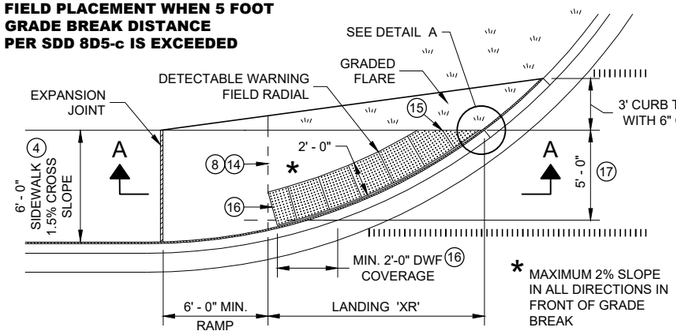
SDD 08D05 - 20e

SDD 08D05-f Curb Ramps Radial Detectable Warning Field Applications

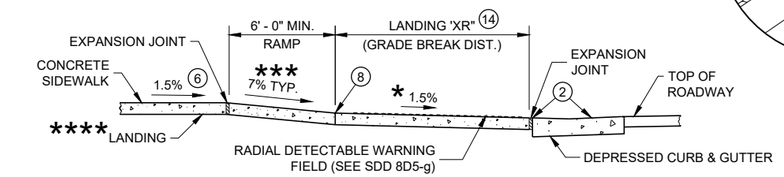
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



PLAN VIEW

CURB RAMP TYPE 4A1

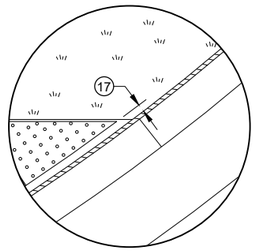
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

SECTION A - A FOR TYPE 4A1



DETAIL A

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AD ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

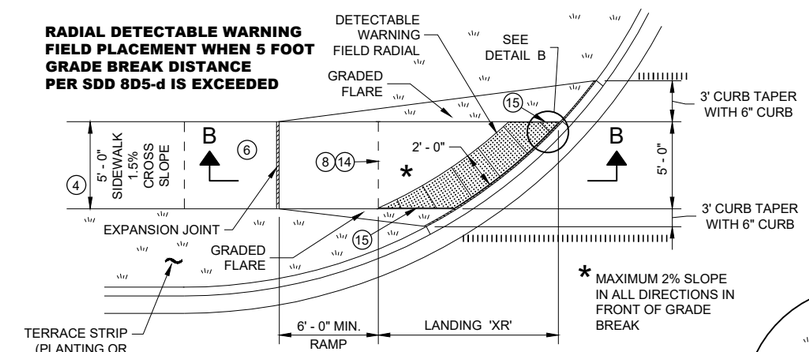
(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

(17) A MAXIMUM 3 INCH CONCRETE BORDER WITH IS ALLOWABLE IN FROM OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

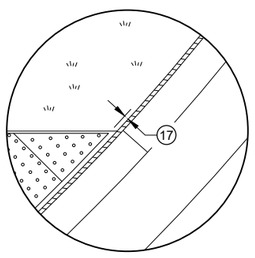
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



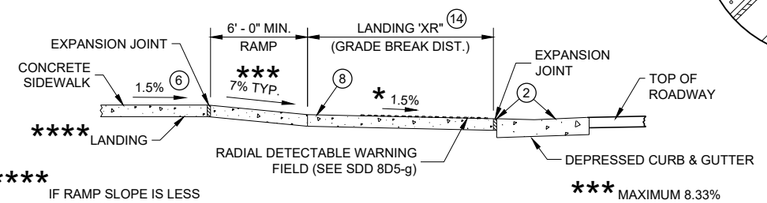
PLAN VIEW

CURB RAMP TYPE 4B1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



DETAIL B

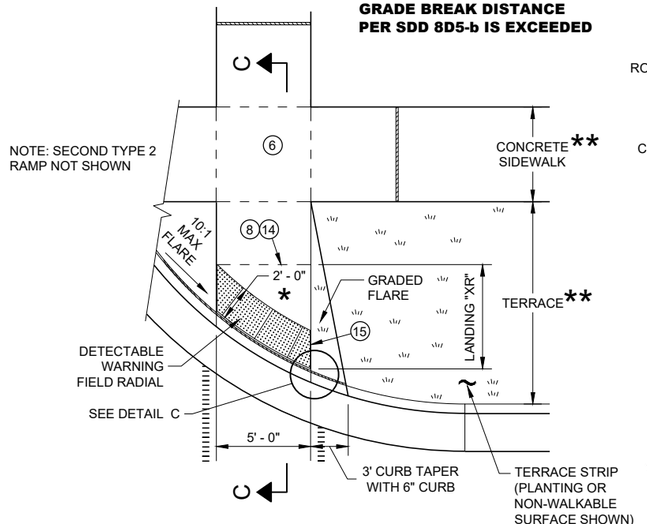


**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

SECTION B - B FOR TYPE 4B1

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-b IS EXCEEDED

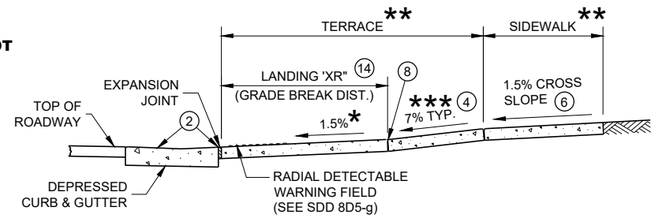


PLAN VIEW

CURB RAMP TYPE 2

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

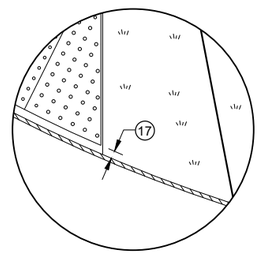


SECTION C - C FOR TYPE 2

* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** MAXIMUM 8.33%



DETAIL C

CURB RAMPS
RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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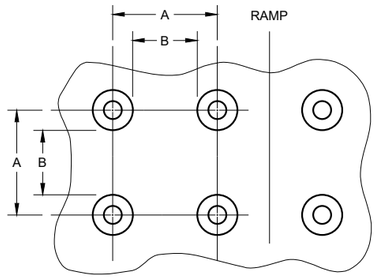
SDD 08D05 - 20f

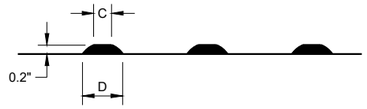
SDD 08D05-g: Curb Ramps Rectangular and Radial Detectable Warning Plates

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

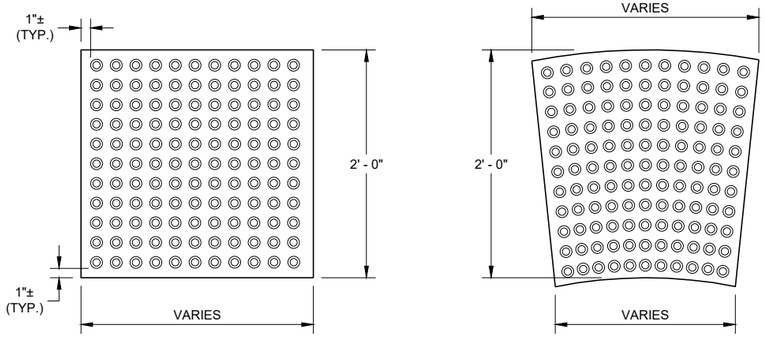


PLAN VIEW



ELEVATION VIEW

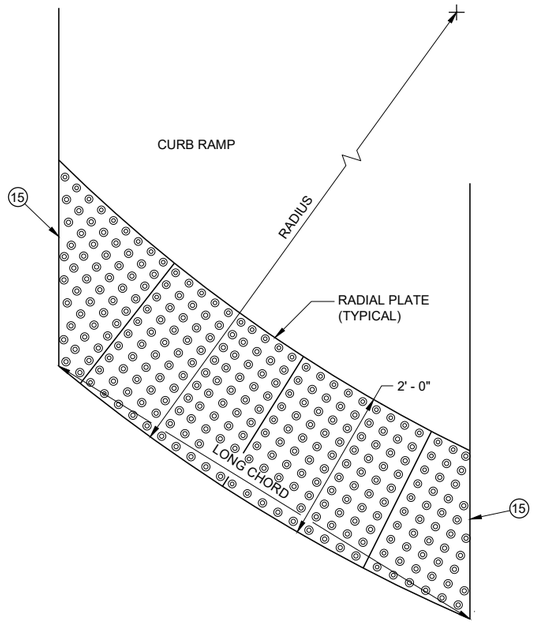
TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



RECTANGULAR PLATES

RADIAL PLATES

PLAN VIEW
DETECTABLE WARNING FIELDS (TYPICAL)



PLAN VIEW
RADIAL DETECTABLE WARNING FIELD ATTRIBUTES

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

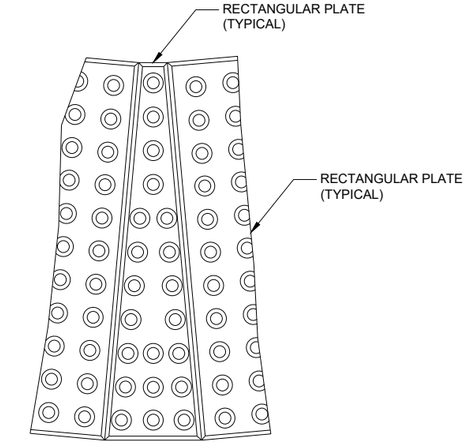
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGE PLATES IN COMBINATION WITH SQUARE PLATES ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.



PLAN VIEW
RADIAL WEDGE PLATE CONNECTION DETAIL

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

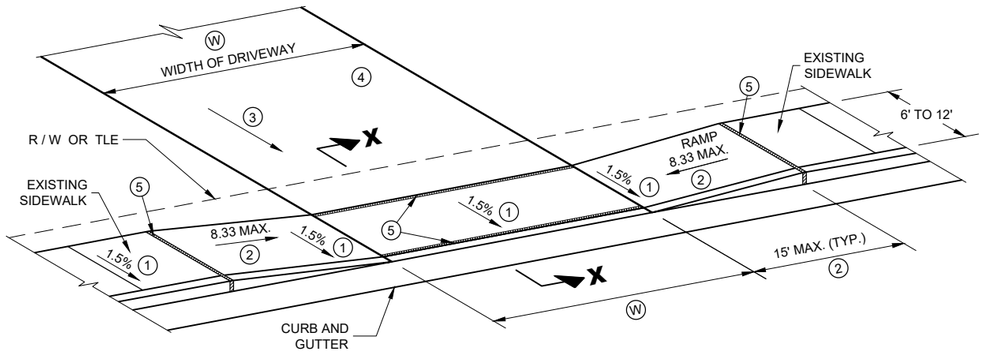
APPROVED
May 2019
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

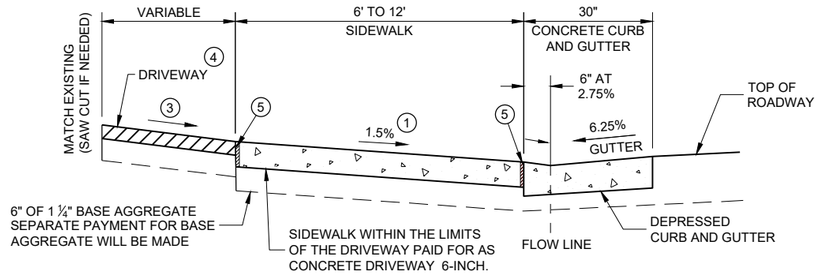
FHWA

6
SDD 08D05 - 20g

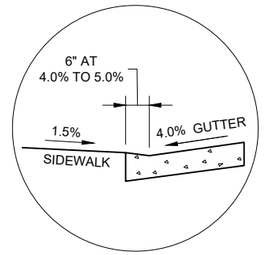
SDD 8D18 Driveway and Sidewalk Ramps Types X and Y



TYPE X
SIDEWALK ABUTS CURB AND GUTTER
TERRACE VARIES 0 TO 3 FEET



SECTION X - X



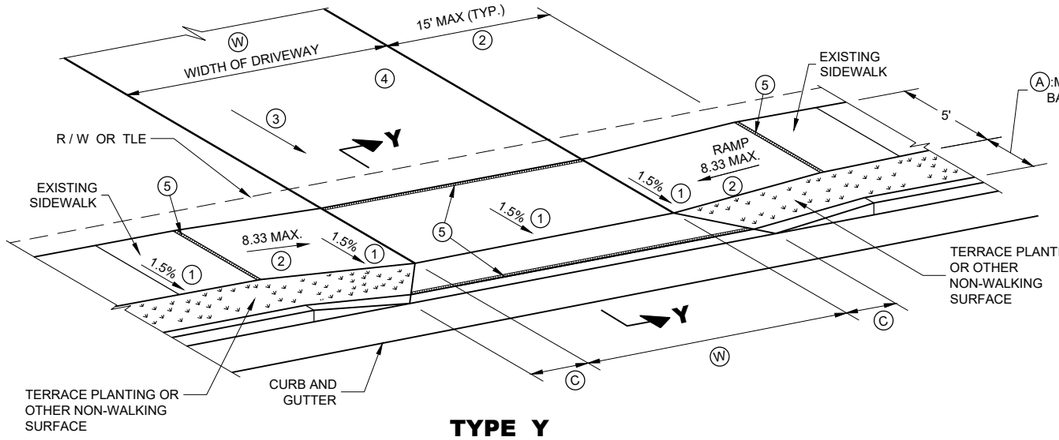
SECTION X - X
4% GUTTER SLOPE

Ⓦ: 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)

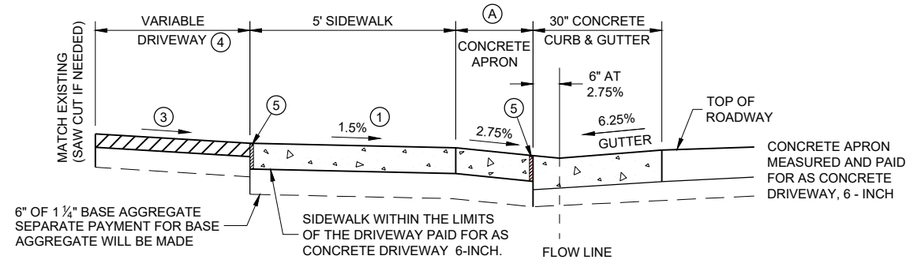
16' MIN. - 35' MAX. COMMERCIAL (CE)

TABLE Y

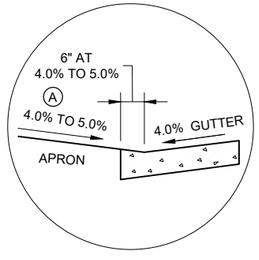
Ⓐ FEET	Ⓒ FEET
3.5'	2.0'
4.5'	3.0'
5.5'	3.5'



TYPE Y
SIDEWALK WITH NARROWER TERRACE
TERRACE VARIES 4 TO 6 FEET



NOTE: SIDEWALK MY BE DEPRESSED IN DRIVEWAY AREAS



SECTION Y - Y
4% GUTTER SLOPE

SECTION Y - Y
DRIVEWAY DETAIL WITH CONCRETE CURB AND GUTTER
(URBAN AND SUBURBAN)

GENERAL NOTES

PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.

Ⓦ IS SHOWN ON PLAN AND PROFILE SHEETS.

OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.

① CONSTRUCTION TOLERANCE OF 0.5%± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

② THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY. SLOPE SIDEWALK RAMP TOWARD APRON AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

③ DRIVEWAY SLOPES: DESIRABLE MAXIMUM
10.5% UP AWAY FROM SIDEWALK (SAG)
8.5% DOWN AWAY FROM SIDEWALK (CREST)
ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG

④ DRIVEWAY TYPES
- 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
- 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
- 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES.)

⑤ ½" EXPANSION JOINT FILLER

DRIVEWAY AND SIDEWALK RAMPS TYPES X AND Y

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022
DATE

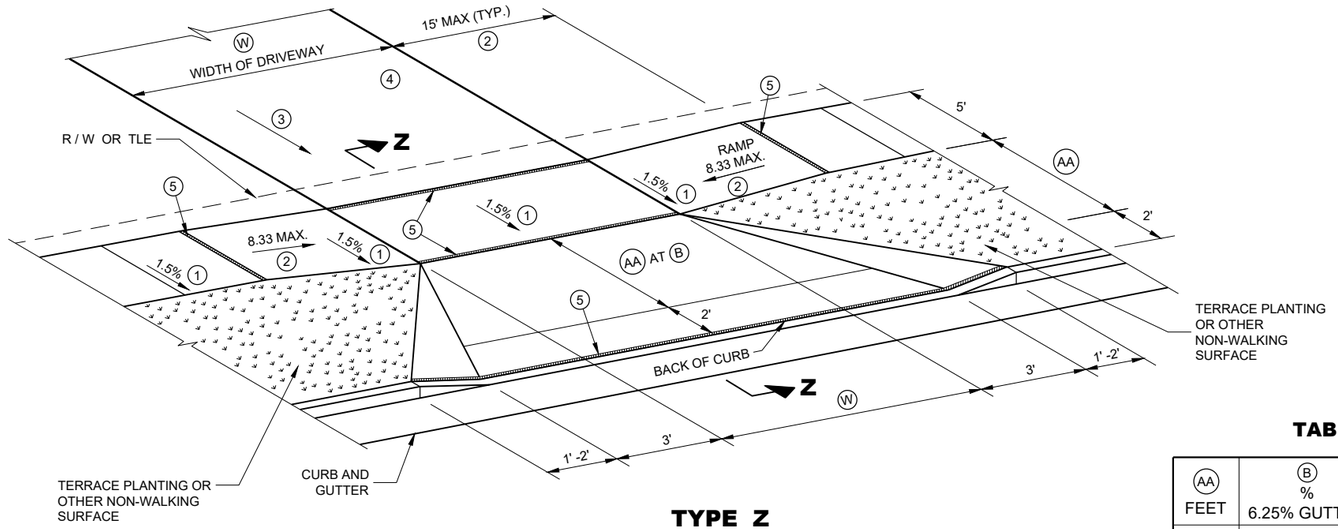
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

SDD 08D18 - 03

SDD 08D18 - 03

SDD 08D19 Driveway and Sidewalk Ramps Type Z



TYPE Z
SIDEWALK WITH WIDER TERRACE
TERRACE VARIES 7 TO 12 FEET

GENERAL NOTES

PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.

(W) IS SHOWN ON PLAN AND PROFILE SHEETS.

OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.

(1) CONSTRUCTION TOLERANCE OF 0.5%± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

(2) THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY.

(3) DRIVEWAY SLOPES: DESIRABLE MAXIMUM
- 10.5% UP AWAY FROM SIDEWALK (SAG)
- 8.5% DOWN AWAY FROM SIDEWALK (CREST)
- ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG

(4) DRIVEWAY TYPES
- 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
- 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
- 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES.)

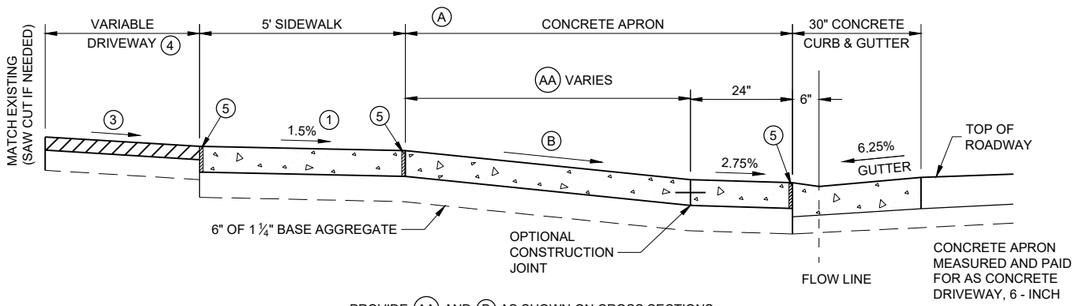
(5) ½" EXPANSION JOINT FILLER.

TABLE Z

(AA) FEET	(B) % 6.25% GUTTER	(B) % 4% GUTTER
4.5'	11.5%	9% TO 11.5%
5.5'	9% TO 11.5%	8% TO 11.5%
6.5'	8% TO 11.5%	6% TO 11.5%
7.5'	7% TO 11.5%	6% TO 11.5%
8.5'	6% TO 11.5%	5% TO 11.5%
9.5'	5% TO 11.5%	4% TO 11.5%

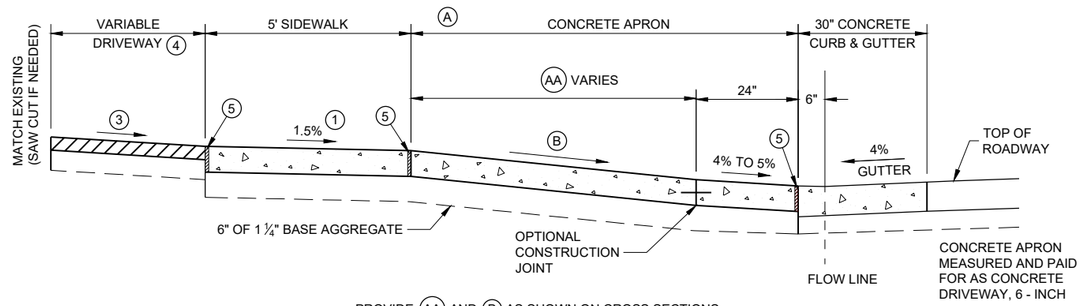
(W): 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)

16' MIN. - 35' MAX. COMMERCIAL (CE)



PROVIDE (AA) AND (B) AS SHOWN ON CROSS SECTIONS.

6.25% GUTTER SLOPE



PROVIDE (AA) AND (B) AS SHOWN ON CROSS SECTIONS.

4% GUTTER SLOPE

NOTE: SIDEWALK MY BE DEPRESSED IN DRIVEWAY AREAS FOR (B) VALUES NOT SHOWN IN TABLE Z.

SIDEWALK WITHIN THE LIMITS OF THE DRIVEWAY PAID FOR AS CONCRETE DRIVEWAY 6-INCH.

SEPARATE PAYMENT FOR BASE AGGREGATE WILL BE MADE.

SECTION Z - Z

DRIVEWAY DETAIL WITH CONCRETE CURB AND GUTTER

(URBAN AND SUBURBAN)

DRIVEWAY AND SIDEWALK RAMPS TYPE Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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SDD 08D19 - 03