hma
ARCHITECTS

ADDENDUM NO. 2
Issued Date: March 11, 2021

New Apartment Complex:
Zumbrota Apartments
Zumbrota, MN

Architect's Project No. 2037

OWNER:
Keller-Baartman VII, LLC
1479 Hay Creek Valley Road
PO Box 31
Red Wing, MN 55066

ARCHITECT:
HMA Architects, Ltd.
700 W. St. Germain Street, Suite 200
St. Cloud, MN 56301-3507
T: 320.251.9155

STRUCTURAL ENGINEER:
Sandman Structural Engineers
1587 30th Avenue South
Moorhead, MN 56560
T: 218.227.0022

CIVIL ENGINEER:
Johnson-Scofield Land Surveying & Engineering
1203 Main Street
Red Wing, MN 55066
T: 651.388.1558
Contact: Steven Voigt, PE

SCOPE OF ADDENDUM:

This addendum shall be appended to, and shall take precedence over, and be considered a part of the drawings and specifications for the above project.

Contractors and subcontractors are responsible for reviewing this addendum and coordinating the changes or clarifications of this addendum with the Contract Documents, including those changes set forth in this addendum which inadvertently affects other areas of the Contract Documents.

CHANGES TO ARCHITECTURAL DRAWINGS: (drawings with revision dated 03/09/2021)

1. Sheet A501, A503, A504, A505, A506:
    a. Exterior Wall Types:
        i. Revise minimum R-value for wall types WE-3, WE-4, WE-4A to **R-13.3ci**.

2. See revised civil engineering drawings from Johnson & Scofield, Inc. dated 3-11-2021, Addendum #2 (delta tag 2). Revisions are indicated with red highlight.
    a. Add detail for roof drain system showing cleanout sizes and locations in both the lead and main pipes.
    b. Revise garage floor drain pipe material from SDR 26 to Schedule 40.
    c. Revise sanitary sewer detail changing from outside drop to inside drop manhole.
    d. Add RIM elevations for SSMH1 and STMH1.

THIS ADDENDUM SHALL BECOME A PART OF THE BID. THE BIDDER SHALL INSERT THE ADDENDUM NUMBER IN THE SPACE WHERE INDICATED ON THE PROPOSAL FORM. FAILURE TO COMPLY MAY RESULT IN THE BID BEING REJECTED.

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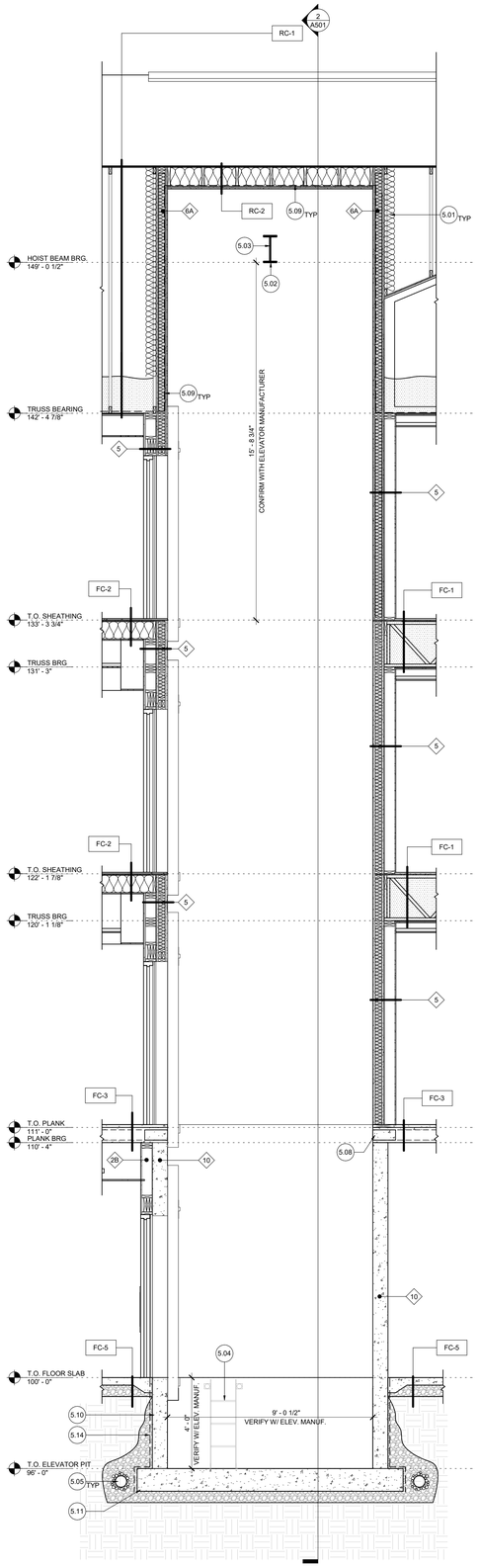
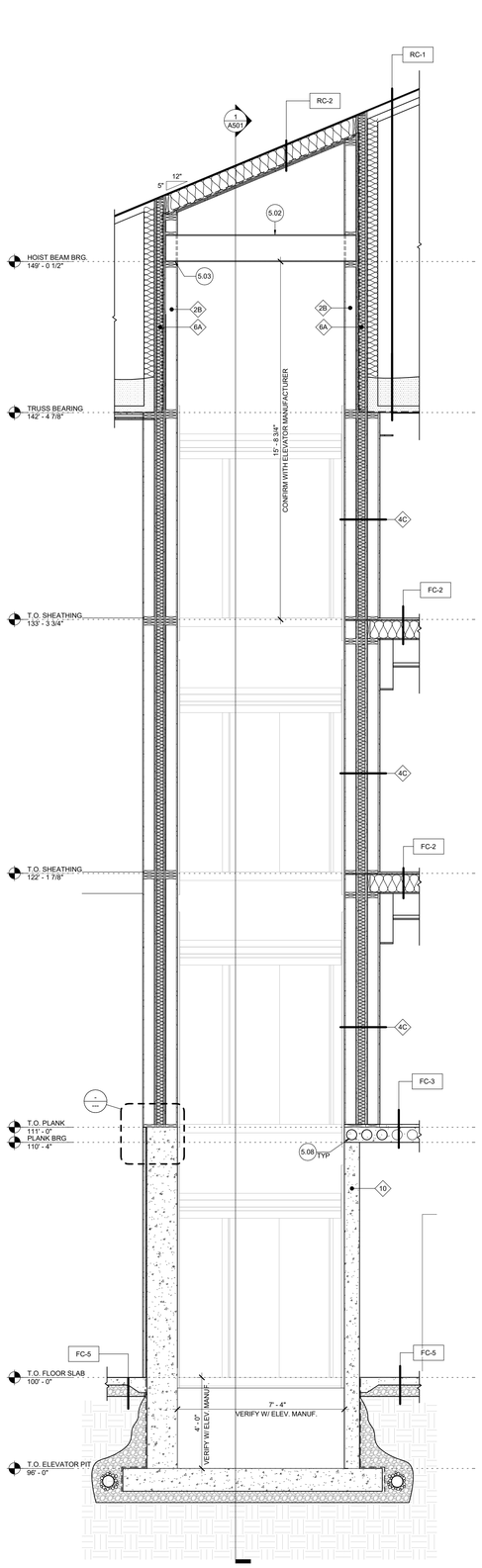
END OF ADDENDUM

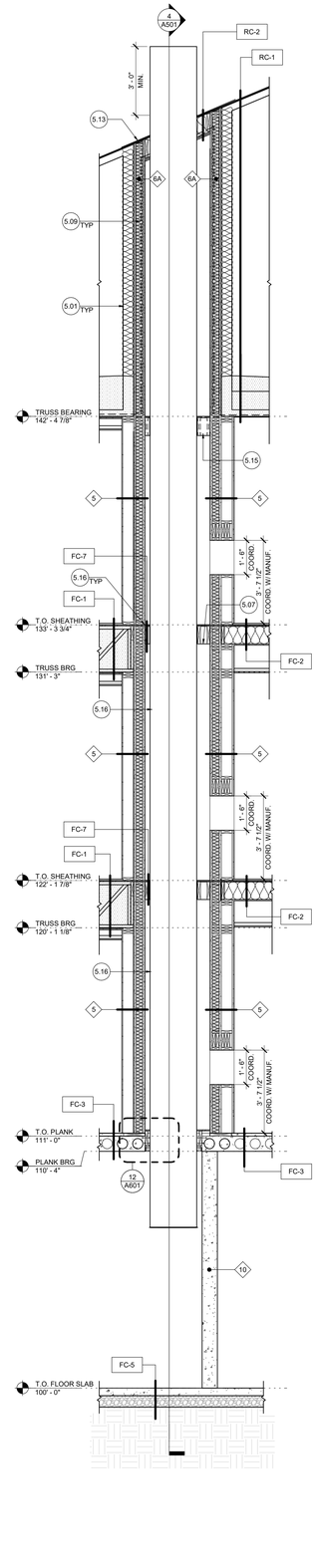
Attachments: A501, A503, A504, A505, A506, civil drawings sheets 1-29.



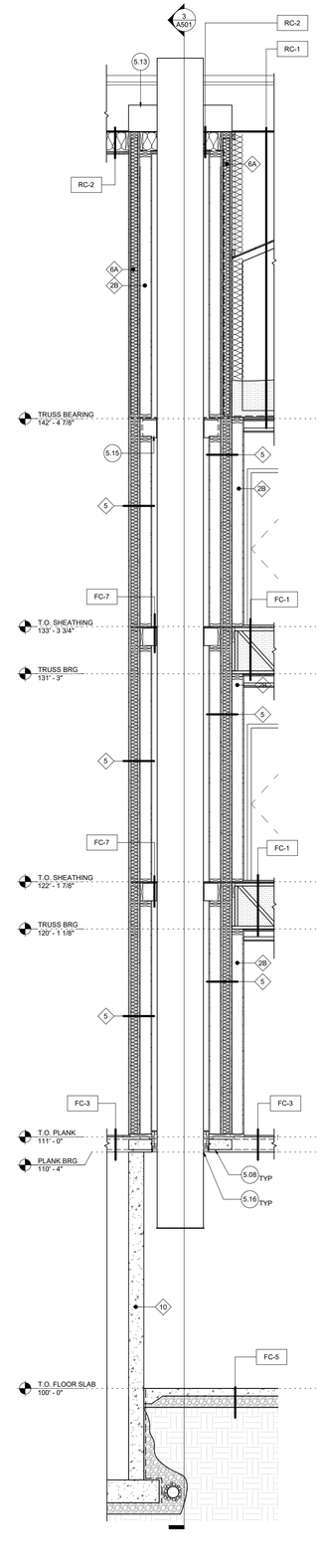
1 A501 ELEVATOR - SECTION
SCALE: 3/8" = 1'-0"



2 A501 ELEVATOR - SECTION
SCALE: 3/8" = 1'-0"
SEE DETAIL(S) 1 FOR ADDITIONAL INFORMATION

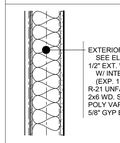


3 A501 REFUSE CHUTE - SECTION
SCALE: 3/8" = 1'-0"
SEE DETAIL(S) 1 FOR ADDITIONAL INFORMATION



4 A501 REFUSE CHUTE - SECTION
SCALE: 3/8" = 1'-0"
SEE DETAIL(S) 1 FOR ADDITIONAL INFORMATION

EXTERIOR WALL TYPES

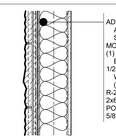


EXTERIOR SIDING / TRIM, SEE ELEVATIONS
1/2" EXT. WALL SHEATHING W/ INTEGRAL W.R.B. (EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSUL.
2x6 WD. STUDS (SEE STRUCT.)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

WE-1 EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)

WE-1A EXTERIOR BEARING WALL - UL# U356
MOLD RESISTANT GYPSUM AT INTERIOR

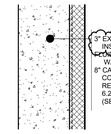
WE-1B EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)
STAGGERED 2X6 FRMAING W/ CAVITY FULL OF INSULATION (11" FRAMING DEPTH)



ADHERED SIMULATED STONE / ADHERED THIN BRICK (DASHED), SEE ELEVATIONS
MORTAR BED W/ METAL LATHE
(1) LAYER GRADE D EQUIVALENT BUILDING WRAP / PAPER
1/2" EXTERIOR WALL SHEATHING W/ INTEGRAL W.R.B. (GRADE D) (EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSULATION
2x6 WD. STUDS (SEE STRUCTURAL)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

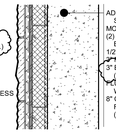
WE-2 EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)

WE-2A EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)
MOLD RESISTANT GYPSUM BD. AT INTERIOR



3" EXTRUDED RIGID INSULATION (R-13.3 MIN.)
WATER PROOFING
8" CAST-IN-PLACE CONCRETE W/ REINFORCEMENT
6.2" MIN. EQUIV. THICKNESS
(SEE STRUCTURAL)

WE-3 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED)

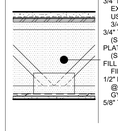


ADHERED SIMULATED STONE
SEE ELEVATIONS
MORTAR BED W/ METAL LATHE
(2) LAYERS GRADE D EQUIVALENT BUILDING WRAP / PAPER
1/2" EXTERIOR WALL SHEATHING
3" EXTRUDED RIGID INSULATION (R-13.3 MIN.)
FOAM CONCRETE FOUNDATION WATER PROOFING
8" CAST-IN-PLACE CONCRETE W/ REINFORCEMENT
(SEE STRUCTURAL)

WE-4 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - TYPICAL

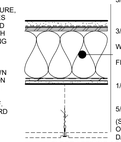
WE-4A FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - SIDING

FLOOR / CEILING TYPES



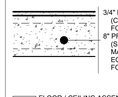
3/4" FLOOR TOPPING MIXTURE, EXCEPT HARDSURFACES USE 1/4" SOUNDMAT AND 3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
PLATED WOOD TRUSSES (SEE STRUCTURAL)
FILL TRUSS FULL W/ BLOWN FIBERGLASS INSULATION
1/2" RESILIENT CHANNELS @ 12" O.C., VERIFY W/ GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD

FC-1 FLOOR / CEILING ASSEMBLY UL# L558
(1-HR RATED) GA FILE # FC 5014



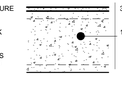
3/4" FLOOR TOPPING MIXTURE, EXCEPT HARDSURFACES USE 1/4" SOUNDMAT AND 3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
WOOD FLOOR JOISTS (SEE STRUCTURAL)
FILL JOIST SPACE FULL W/ UNFACED FIBERGLASS BATT INSULATION
1/2" RESILIENT CHANNELS @ 12" O.C., VERIFY W/ GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD
(SUSPENDED ACT WHERE OCCURS, SEE CEILING PLANS - DASHED)

FC-2 FLOOR / CEILING ASSEMBLY UL# L501
(1-HR RATED) GA FILE # FC 5420



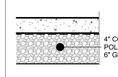
3/4" FLOOR TOPPING MIXTURE (COORD. WITH MANUF. FOR RATING)
8" PRECAST FLOOR PLANK (SEE STRUCTURAL), MANUF. TO PROVIDE EQUIVALENT THICKNESS FOR RATING INDICATED

FC-3 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



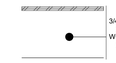
3/4" FLOOR TOPPING MIXTURE (COORD. WITH MANUF. FOR RATING)
12" PRECAST FLOOR PLANK (SEE STRUCTURAL) MANUF. TO PROVIDE EQUIVALENT THICKNESS FOR RATING INDICATED

FC-4 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



4" CONCRETE FLOOR
POLY VAPOR BARRIER
6" GRANULAR FILL

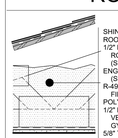
FC-5 FLOOR ASSEMBLY - SLAB



3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
WOOD FLOOR JOISTS (SEE STRUCTURAL)

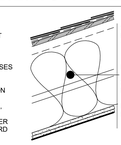
FC-6 FLOOR / CEILING ASSEMBLY

ROOF / CEILING TYPES



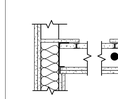
SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD ROOF SHEATHING (SEE STRUCTURAL)
ENGINEERED ROOF TRUSSES (SEE STRUCTURAL)
R-49 MIN LOOSE FILL FIBERGLASS INSULATION
POLY VAPOR RETARDER
1/2" RESILIENT CHANNELS, VERIFY SPACING W/ GYPSUM MANUFACTURER
5/8" TYPE C GYPSUM BOARD

RC-1 ROOF / CEILING ASSEMBLY UL# P533
(1-HR RATED) GA FILE # RC 2603



SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD ROOF SHEATHING (SEE STRUCTURAL)
ROOF JOISTS (SEE STRUCTURAL)
2X10 WOOD FURRING
R-49 MIN FIBERGLASS BATT INSULATION
POLY VAPOR RETARDER
(2) LAYERS 5/8" TYPE X GYPSUM BOARD

RC-2 ROOF / CEILING ASSEMBLY
(1 HR RATED) IBC # 21-1.1 [TABLE 721.1]



1" LINER PANEL
18 GAUGE 4"C-H STUDS @ 24" O.C.
(2) LAYERS 5/8" FIRECODE GYP. BD. TYPE C

RC-3 ROOF / CEILING ASSEMBLY
(2-HR RATED) AER-09038

KEYNOTES - WALL SECTIONS

5.01	R-21 UNFACED FIBERGLASS BATT INSULATION CLIPPED IN TRUSS @ ATTIC SIDE OF SHAFT WALL
5.02	HOIST BEAM, SEE STRUCT.
5.03	SEAL PENETRATION AT ROOF / WALL ASSEMBLY
5.04	ELEVATOR PIT LADDER IN BACKGROUNDS, COORDINATE W/ ELEVATOR MANUFACTURER
5.05	DRAIN TILE IN GRAVEL BED, VERIFY W/ PLUMBING FOR CONNECTION & SIZE, TIE TILE PIPING INTO STORM SYSTEM.
5.07	INFILL FLOOR FRAMING, SEE STRUCTURAL FOR ADDITIONAL INFORMATION.
5.08	FILL PRECAST CORES W/ CONCRETE
5.09	POLY VAPOR RETARDER INSIDE SHAFT KEEP ON WARM SIDE OF WALL/CEILING
5.10	CONCRETE FOUNDATION WALL AT ELEVATOR PIT, SEE STRUCT.
5.11	CONCRETE FOOTING/ELEVATOR PIT BOTTOM, SEE STRUCT.
5.13	TRASH CHUTE FLASHING, TIE INTO ROOF SYSTEM COORDINATE W/ MANUFACTURER
5.14	WATER PROOFING, SEE SPECIFICATION (SHOWN DASHED)
5.15	INFILL FLOOR FRAMING SHOWN DASHED, COORDINATE WITH TRASH CHUTE MANUFACTURER FOR INSTALLATION BEYOND ROOF TRUSS BEARING
5.16	TRASH CHUTE - PROVIDE FIRE RATING AT ALL PENETRATIONS

GENERAL NOTES:

1. SEE PARKING LEVEL PLANS FOR INTERIOR WALL TYPES AT THE PARKING LEVEL AREAS. SEE ENLARGED UNIT PLANS FOR INTERIOR WALL TYPES AT STORIES ABOVE THE PARKING LEVEL.

SANDMAN Structural Engineers

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision & that I am a duly Licensed Architect under the laws of the State of Minnesota

Signature:

Printed Name: Tim Gillet

License No.: 51031

Date: 02/19/2021

Project No: 2037
Project Manager: DAS
Drawn By: NJT
Date: 02/19/2021

	Date	Description
2	03/09/2021	Addendum 2

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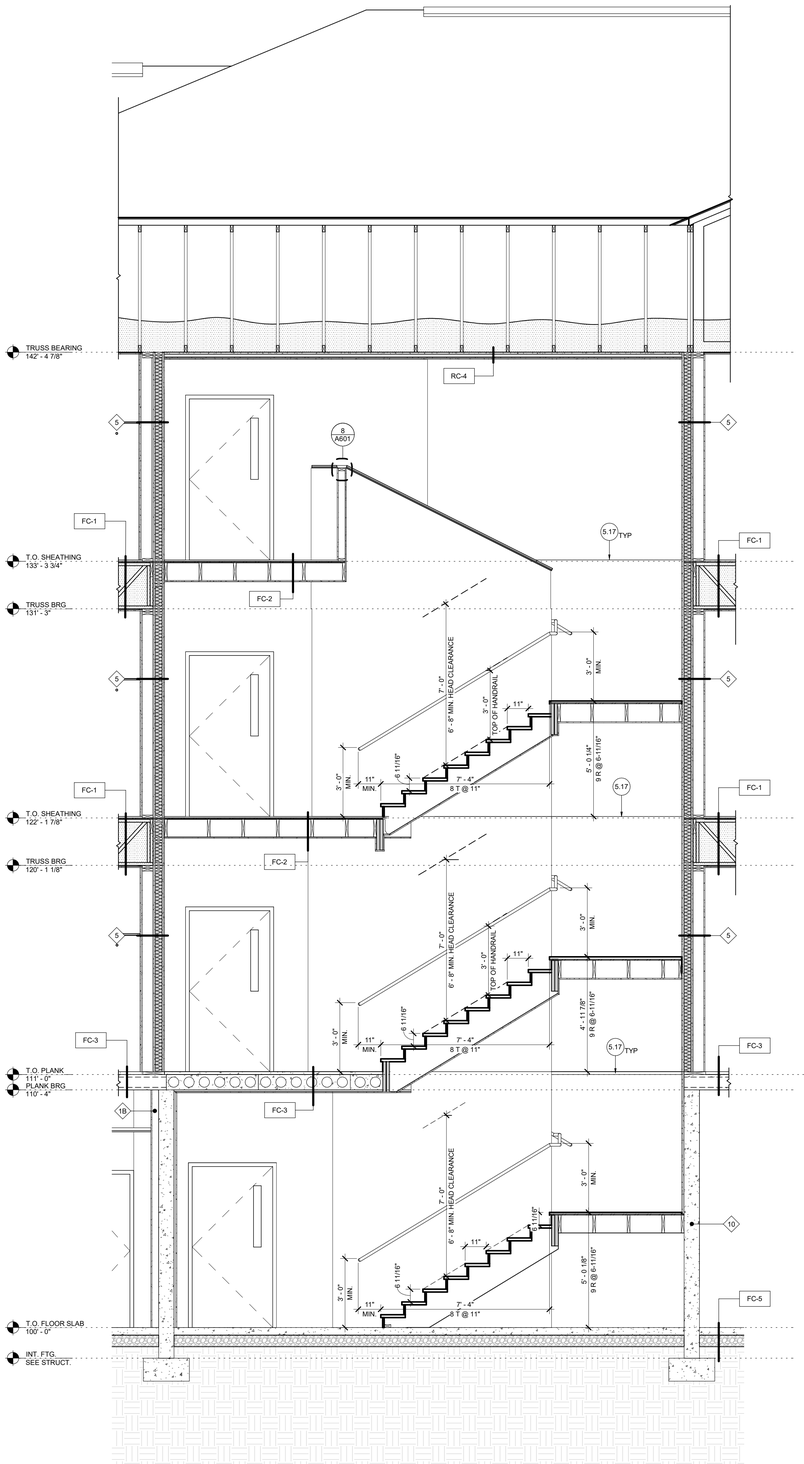
New Apartment Complex:

Zumbrota Apartment Complex

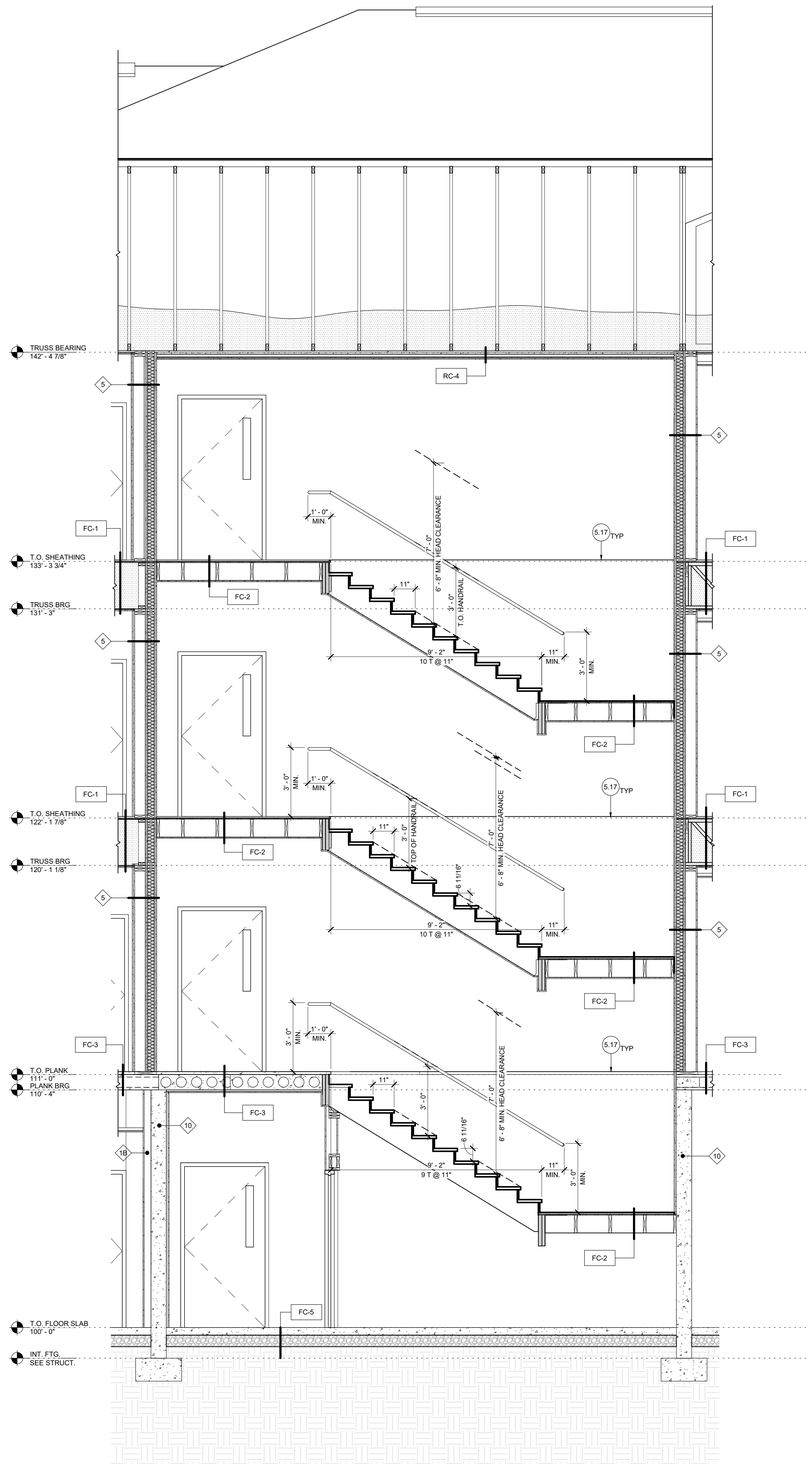
Zumbrota, MN

WALL SECTIONS

A501

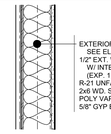


1 A503 STAIR 'B' - SECTION
SCALE: 3/8" = 1'-0"



2 A503 STAIR 'B' - SECTION
SCALE: 3/8" = 1'-0"

EXTERIOR WALL TYPES

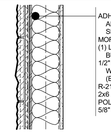


EXTERIOR SIDING / TRIM, SEE ELEVATIONS
1/2" EXT. WALL SHEATHING W/ INTEGRAL W.R.B. (EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSUL.
2x6 WD. STUDS (SEE STRUCT.)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

WE-1 EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)

WE-1A EXTERIOR BEARING WALL - UL# U356
MOLD RESISTANT GYPSUM AT INTERIOR

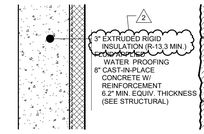
WE-1B EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)
STAGGERED 2X6 FRMAING W/ CAVITY FULL OF INSULATION (11" FRAMING DEPTH)



ADHERED SIMULATED STONE / ADHERED THIN BRICK (DASHED), SEE ELEVATIONS
MORTAR BED W/ METAL LATHE
(1) LAYER GRADE D EQUIVALENT BUILDING WRAP / PAPER
1/2" EXTERIOR WALL SHEATHING W/ INTEGRAL W.R.B. (GRADE D) (EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSULATION
2x6 WD. STUDS (SEE STRUCTURAL)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

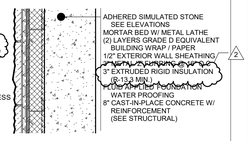
WE-2 EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)

WE-2A EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)
MOLD RESISTANT GYPSUM BD. AT INTERIOR



2
3" EXTRUDED RIGID INSULATION (R-13.3 MIN.)
WATER PROOFING
8" CAST-IN-PLACE CONCRETE W/ REINFORCEMENT
6.2" MIN. EQUIV. THICKNESS
(SEE STRUCTURAL)

WE-3 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED)

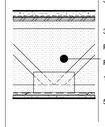


ADHERED SIMULATED STONE
SEE ELEVATIONS
MORTAR BED W/ METAL LATHE
(2) LAYERS GRADE D EQUIVALENT BUILDING WRAP / PAPER
1/2" EXTERIOR WALL SHEATHING
2
3" EXTRUDED RIGID INSULATION (R-13.3 MIN.)
WATER PROOFING
8" CAST-IN-PLACE CONCRETE W/ REINFORCEMENT
(SEE STRUCTURAL)

WE-4 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - TYPICAL

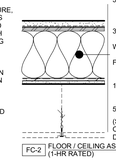
WE-4A FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - SIDING

FLOOR / CEILING TYPES



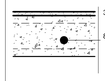
3/4" FLOOR TOPPING MIXTURE, EXCEPT HARDSURFACES USE 1/4" SOUNDMAT AND 3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
PLATED WOOD TRUSSES (SEE STRUCTURAL)
FILL TRUSS FULL W/ BLOWN FIBERGLASS INSULATION
1/2" RESILIENT CHANNELS @ 12" O.C., VERIFY W/ GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD

FC-1 FLOOR / CEILING ASSEMBLY UL# L558
(1-HR RATED) GA FILE # FC 5514



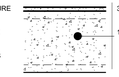
3/4" FLOOR TOPPING MIXTURE, EXCEPT HARDSURFACES USE 1/4" SOUNDMAT AND 3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
WOOD FLOOR JOISTS (SEE STRUCTURAL)
FILL JOIST SPACE FULL W/ UNFACED FIBERGLASS BATT INSULATION
1/2" RESILIENT CHANNELS @ 12" O.C., VERIFY W/ GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD
(SUSPENDED ACT WHERE OCCURS, SEE CEILING PLANS - DASHED)

FC-2 FLOOR / CEILING ASSEMBLY UL# L501
(1-HR RATED) GA FILE # FC 5420



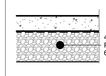
3/4" FLOOR TOPPING MIXTURE (CCORD. WITH MANUF. FOR RATING)
8" PRECAST FLOOR PLANK (SEE STRUCTURAL), MANUF. TO PROVIDE EQUIVALENT THICKNESS FOR RATING INDICATED

FC-3 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



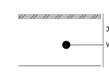
3/4" FLOOR TOPPING MIXTURE (CCORD. WITH MANUF. FOR RATING)
12" PRECAST FLOOR PLANK (SEE STRUCTURAL) MANUF. TO PROVIDE EQUIVALENT THICKNESS FOR RATING INDICATED

FC-4 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



4" CONCRETE FLOOR
POLY VAPOR BARRIER
6" GRANULAR FILL

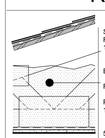
FC-5 FLOOR ASSEMBLY - SLAB



3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
WOOD FLOOR JOISTS (SEE STRUCTURAL)

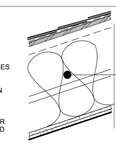
FC-6 FLOOR / CEILING ASSEMBLY

ROOF / CEILING TYPES



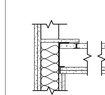
SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD ROOF SHEATHING (SEE STRUCTURAL)
ENGINEERED ROOF TRUSSES (SEE STRUCTURAL)
R-49 MIN LOOSE FILL FIBERGLASS INSULATION
POLY VAPOR RETARDER
1/2" RESILIENT CHANNELS, VERIFY SPACING W/ GYPSUM MANUFACTURER
5/8" TYPE C GYPSUM BOARD

RC-1 ROOF / CEILING ASSEMBLY UL# P533
(1-HR RATED) GA FILE # RC 2603



SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD ROOF SHEATHING (SEE STRUCTURAL)
ROOF JOISTS (SEE STRUCTURAL)
2X10 WOOD FURRING
R-49 MIN FIBERGLASS BATT INSULATION
POLY VAPOR RETARDER
(2) LAYERS 5/8" TYPE X GYPSUM BOARD

RC-2 ROOF / CEILING ASSEMBLY
(1 HR RATED) IBC # 21-1.1 [TABLE 721.1]



1" LINER PANEL
18 GAUGE 4" C-H STUDS @ 24" O.C.
(2) LAYERS 5/8" FIRECODE GYP. BD. TYPE C

RC-3 ROOF / CEILING ASSEMBLY
(2-HR RATED) AER-09038

KEYNOTES - WALL SECTIONS

5.17 CONTROL JOINT, TYP.

SANDMAN
Structural Engineers

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision & that I am a duly Licensed Architect under the laws of the State of Minnesota

Signature:

Printed Name: Tim Gillet

License No.: 51031

Date: 02/19/2021

Project No: 2037
Project Manager: DAS
Drawn By: NJT
Date: 02/19/2021

	Date	Description
2	03/09/2021	Addendum 2

hma ARCHITECTS
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St. Cloud, MN 56301
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F | 320.251.4919
hma@hma-archs.com

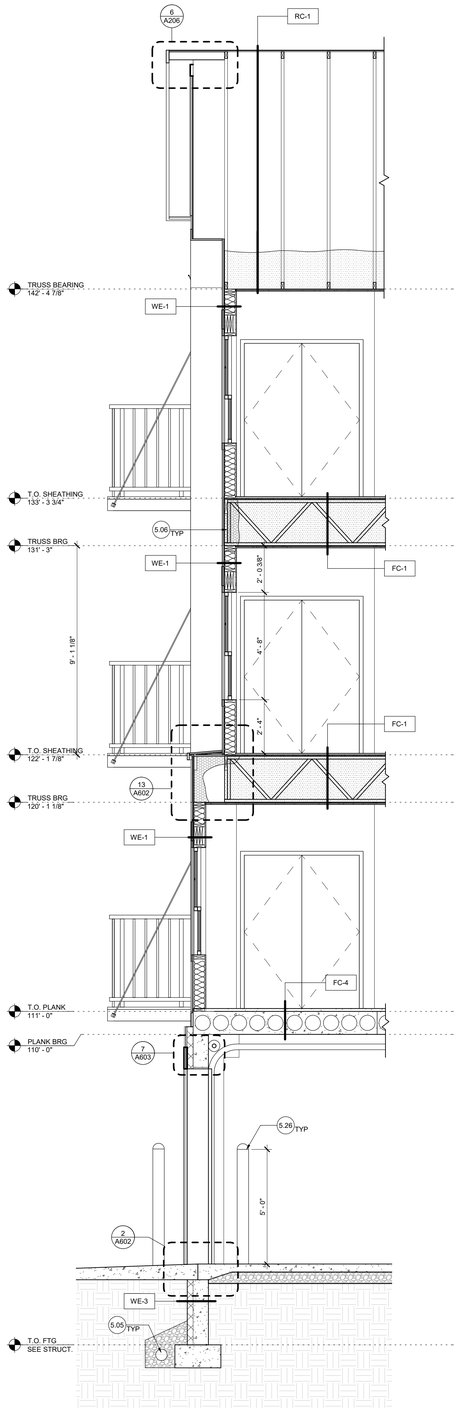
New Apartment Complex:

Zumbrota Apartment Complex

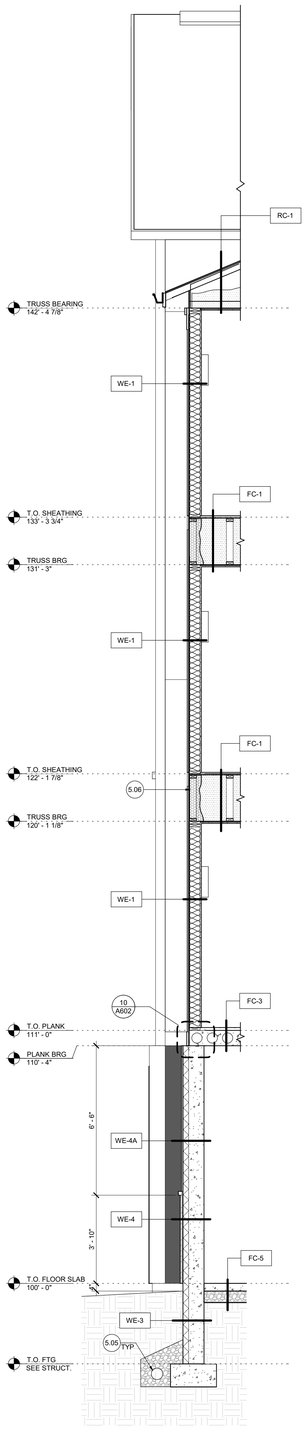
Zumbrota, MN

WALL SECTIONS

A503

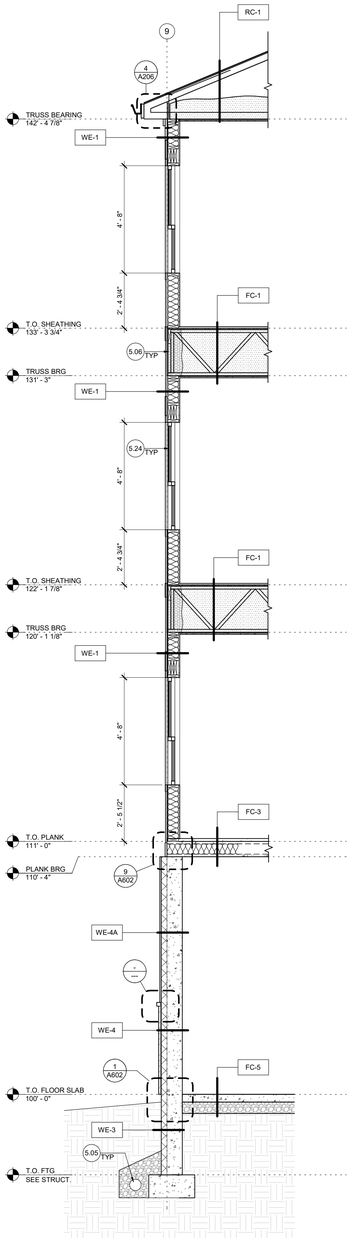


1 WALL SECTION
A504 SCALE: 3/8" = 1'-0"



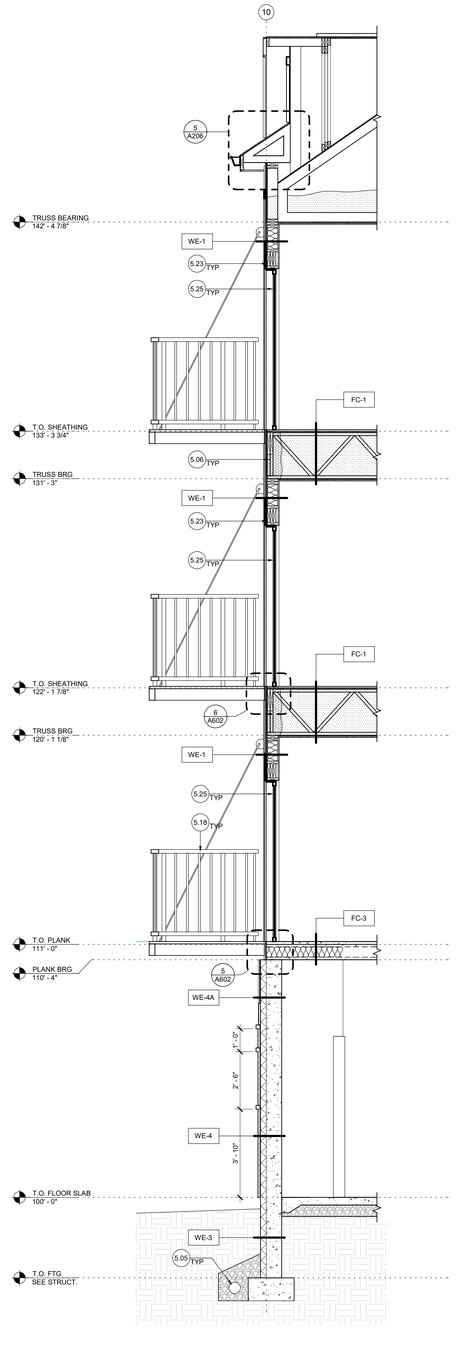
2 WALL SECTION
A504 SCALE: 3/8" = 1'-0"

SEE DETAIL(S) 1 FOR ADDITIONAL INFORMATION



3 WALL SECTION
A504 SCALE: 3/8" = 1'-0"

SEE DETAIL(S) 1 FOR ADDITIONAL INFORMATION



4 WALL SECTION
A504 SCALE: 3/8" = 1'-0"

SEE DETAIL(S) 1 FOR ADDITIONAL INFORMATION

EXTERIOR WALL TYPES

EXTERIOR SIDING / TRIM, SEE ELEVATIONS
1/2" EXT. WALL SHEATHING W/ INTEGRAL W.R.B. (EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSUL.
2x6 WD. STUDS (SEE STRUCT.)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

WE-1 EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)

WE-1A EXTERIOR BEARING WALL - UL# U356
MOLD RESISTANT GYPSUM AT INTERIOR

WE-1B EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)
STAGGERED 2X6 FRMAING W/ CAVITY
FULL OF INSULATION (11" FRAMING DEPTH)

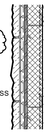
ADHERED SIMULATED STONE / ADHERED THIN BRICK (DASHED), SEE ELEVATIONS
MORTAR BED W/ METAL LATHE
(1) LAYER GRADE D EQUIVALENT BUILDING WRAP / PAPER
1/2" EXTERIOR WALL SHEATHING W/ INTEGRAL W.R.B. (GRADE D) (EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSULATION
2x6 WD. STUDS (SEE STRUCTURAL)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

WE-2 EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)

WE-2A EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)
MOLD RESISTANT GYPSUM BD. AT INTERIOR

2
3" EXTRUDED RIGID INSULATION (R-13.3 MIN.)
WATER PROOFING
8" CAST-IN-PLACE CONCRETE W/ REINFORCEMENT
6.2" MIN. EQUIV. THICKNESS
(SEE STRUCTURAL)

WE-3 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED)

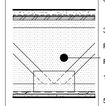


ADHERED SIMULATED STONE
SEE ELEVATIONS
MORTAR BED W/ METAL LATHE
(2) LAYERS GRADE D EQUIVALENT BUILDING WRAP / PAPER
1/2" EXTERIOR WALL SHEATHING
2
3" EXTRUDED RIGID INSULATION (R-13.3 MIN.)
WATER PROOFING
8" CAST-IN-PLACE CONCRETE W/ REINFORCEMENT
(SEE STRUCTURAL)

WE-4 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - TYPICAL

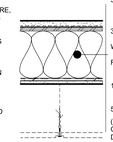
WE-4A FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - SIDING

FLOOR / CEILING TYPES



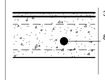
3/4" FLOOR TOPPING MIXTURE, EXCEPT HARDSURFACES USE 1/4" SOUNDMAT AND 3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
PLATED WOOD TRUSSES (SEE STRUCTURAL)
FILL TRUSS FULL W/ BLOWN FIBERGLASS INSULATION
1/2" RESILIENT CHANNELS @ 12" O.C., VERIFY W/ GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD

FC-1 FLOOR / CEILING ASSEMBLY UL# L558
(1-HR RATED) GA FILE # FC 5514



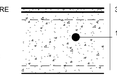
3/4" FLOOR TOPPING MIXTURE, EXCEPT HARDSURFACES USE 1/4" SOUNDMAT AND 3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
WOOD FLOOR JOISTS (SEE STRUCTURAL)
FILL JOIST SPACE FULL W/ UNFACED FIBERGLASS BATT INSULATION
1/2" RESILIENT CHANNELS @ 12" O.C., VERIFY W/ GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD
(SUSPENDED ACT WHERE OCCURS, SEE CEILING PLANS - DASHED)

FC-2 FLOOR / CEILING ASSEMBLY UL# L501
(1-HR RATED) GA FILE # FC 5420



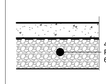
3/4" FLOOR TOPPING MIXTURE (COORD. WITH MANUF. FOR RATING)
8" PRECAST FLOOR PLANK (SEE STRUCTURAL), MANUF. TO PROVIDE EQUIVALENT THICKNESS FOR RATING INDICATED

FC-3 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



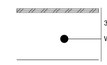
3/4" FLOOR TOPPING MIXTURE (COORD. WITH MANUF. FOR RATING)
12" PRECAST FLOOR PLANK (SEE STRUCTURAL), MANUF. TO PROVIDE EQUIVALENT THICKNESS FOR RATING INDICATED

FC-4 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



4" CONCRETE FLOOR
POLY VAPOR BARRIER
6" GRANULAR FILL

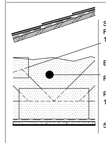
FC-5 FLOOR ASSEMBLY - SLAB



3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
WOOD FLOOR JOISTS (SEE STRUCTURAL)

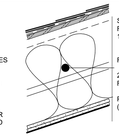
FC-6 FLOOR / CEILING ASSEMBLY

ROOF / CEILING TYPES



SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD ROOF SHEATHING (SEE STRUCTURAL)
ENGINEERED ROOF TRUSSES (SEE STRUCTURAL)
R-49 MIN LOOSE FILL FIBERGLASS INSULATION
POLY VAPOR RETARDER
1/2" RESILIENT CHANNELS, VERIFY SPACING W/ GYPSUM MANUFACTURER
5/8" TYPE C GYPSUM BOARD

RC-1 ROOF / CEILING ASSEMBLY UL# P533
(1-HR RATED) GA FILE # RC 2603



SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD ROOF SHEATHING (SEE STRUCTURAL)
ROOF JOISTS (SEE STRUCTURAL)
2X10 WOOD FURRING
R-49 MIN FIBERGLASS BATT INSULATION
POLY VAPOR RETARDER
(2) LAYERS 5/8" TYPE X GYPSUM BOARD

RC-2 ROOF / CEILING ASSEMBLY
(1 HR RATED) IBC # 21-1.1 [TABLE 721.1]

1" LINER PANEL
18 GAUGE 4" C-H STUDS @ 24" O.C.
(2) LAYERS 5/8" FIRECODE GYP. BD. TYPE C

RC-3 ROOF / CEILING ASSEMBLY
(2-HR RATED) AER-09038

KEYNOTES - WALL SECTIONS

5.05 DRAIN TILE IN GRAVEL BED, VERIFY W/ PLUMBING FOR CONNECTION & SIZE, TIE TILE PIPING INTO STORM SYSTEM.
5.06 SPRAY FOAM INSULATION AS REQUIRED (R-21 MIN.)
5.18 PRE-FAB ALUMINUM BALCONY, BY OTHERS
5.23 LINTEL, SEE STRUCT.
5.24 VINYL WINDOW OPENING AS SCHEDULED
5.25 VINYL PATIO DOOR OPENING AS SCHEDULED
5.26 SURFACE MOUNTED BOLLARD

SANDMAN
Structural Engineers

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision & that I am a duly Licensed Architect under the laws of the State of Minnesota

Signature:

Printed Name: Tim Gillet

License No.: 51031

Date: 02/19/2021

Project No: 2037
Project Manager: DAS
Drawn By: NJT
Date: 02/19/2021

	Date	Description
2	03/09/2021	Addendum 2

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St. Cloud, MN 56301
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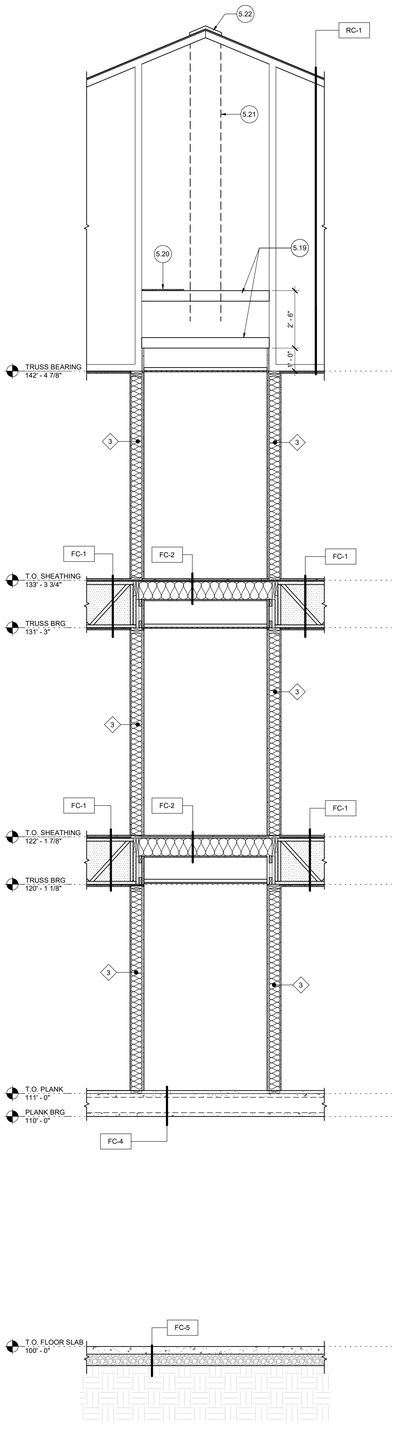
New Apartment Complex:

Zumbrota Apartment Complex

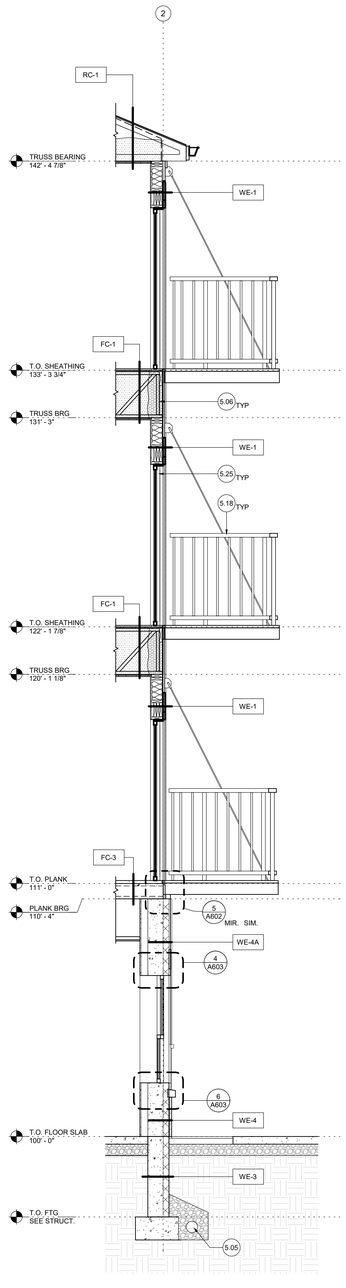
Zumbrota, MN

WALL SECTIONS

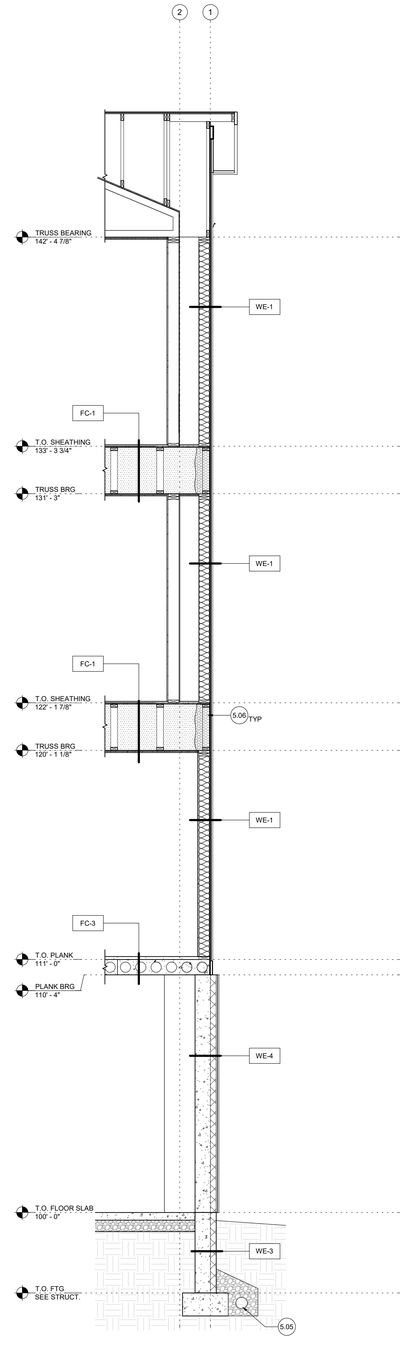
A504



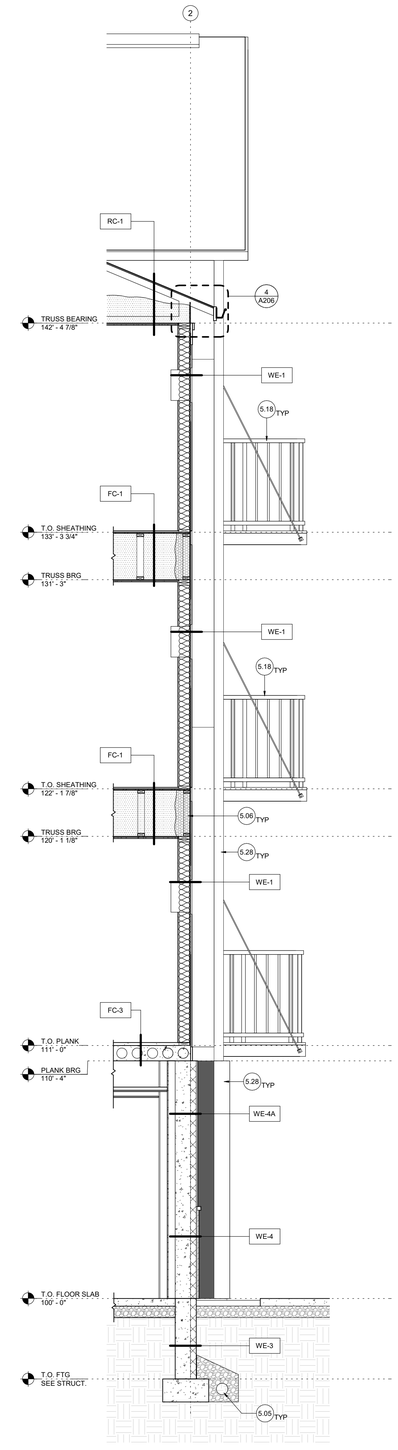
1 A505 WALL SECTION
SCALE: 3/8" = 1'-0"



2 A505 WALL SECTION
SCALE: 3/8" = 1'-0"

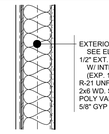


3 A505 WALL SECTION
SCALE: 3/8" = 1'-0"



4 A505 WALL SECTION
SCALE: 3/8" = 1'-0"

EXTERIOR WALL TYPES

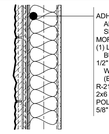


EXTERIOR SIDING / TRIM, SEE ELEVATIONS
1/2" EXT. WALL SHEATHING W/ INTEGRAL W.R.B. (EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSUL.
2x6 WD. STUDS (SEE STRUCT.)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

WE-1 EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)

WE-1A EXTERIOR BEARING WALL - UL# U356
MOLD RESISTANT GYPSUM AT INTERIOR

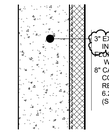
WE-1B EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)
STAGGERED 2X6 FRMAING W/ CAVITY FULL OF INSULATION (11" FRAMING DEPTH)



ADHERED SIMULATED STONE / ADHERED THIN BRICK (DASHED), SEE ELEVATIONS
MORTAR BED W/ METAL LATHE
(1) LAYER GRADE D EQUIVALENT BUILDING WRAP / PAPER
1/2" EXTERIOR WALL SHEATHING W/ INTEGRAL W.R.B. (GRADE D) (EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSULATION
2x6 WD. STUDS (SEE STRUCTURAL)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

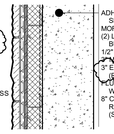
WE-2 EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)

WE-2A EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)
MOLD RESISTANT GYPSUM BD. AT INTERIOR



2
3" EXTRUDED RIGID INSULATION (R-13.3 MIN.)
WATER PROOFING
8" CAST-IN-PLACE CONCRETE W/ REINFORCEMENT
6.2" MIN. EQUIV. THICKNESS
(SEE STRUCTURAL)

WE-3 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED)

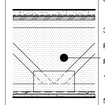


ADHERED SIMULATED STONE
SEE ELEVATIONS
MORTAR BED W/ METAL LATHE
(2) LAYERS GRADE D EQUIVALENT BUILDING WRAP / PAPER
1/2" EXTERIOR WALL SHEATHING
2
3" EXTRUDED RIGID INSULATION (R-13.3 MIN.)
WATER PROOFING
8" CAST-IN-PLACE CONCRETE W/ REINFORCEMENT
(SEE STRUCTURAL)

WE-4 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - TYPICAL

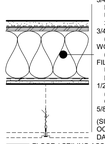
WE-4A FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - SIDING

FLOOR / CEILING TYPES



3/4" FLOOR TOPPING MIXTURE, EXCEPT HARDSURFACES USE 1/4" SOUNDMAT AND 3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
PLATED WOOD TRUSSES (SEE STRUCTURAL)
FILL TRUSS FULL W/ BLOWN FIBERGLASS INSULATION
1/2" RESILIENT CHANNELS @ 12" O.C., VERIFY W/ GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD

FC-1 FLOOR / CEILING ASSEMBLY UL# L558
(1-HR RATED) GA FILE # FC 5514

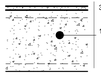


3/4" FLOOR TOPPING MIXTURE, EXCEPT HARDSURFACES USE 1/4" SOUNDMAT AND 3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
WOOD FLOOR JOISTS (SEE STRUCTURAL)
FILL JOIST SPACE FULL W/ UNFACED FIBERGLASS BATT INSULATION
1/2" RESILIENT CHANNELS @ 12" O.C., VERIFY W/ GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD
(SUSPENDED ACT WHERE OCCURS, SEE CEILING PLANS - DASHED)

FC-2 FLOOR / CEILING ASSEMBLY UL# L501
(1-HR RATED) GA FILE # FC 5420

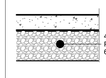
3/4" FLOOR TOPPING MIXTURE (CCORD. WITH MANUF. FOR RATING)
8" PRECAST FLOOR PLANK (SEE STRUCTURAL)
MANUF. TO PROVIDE EQUIVALENT THICKNESS FOR RATING INDICATED

FC-3 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



3/4" FLOOR TOPPING MIXTURE (CCORD. WITH MANUF. FOR RATING)
12" PRECAST FLOOR PLANK (SEE STRUCTURAL)
MANUF. TO PROVIDE EQUIVALENT THICKNESS FOR RATING INDICATED

FC-4 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



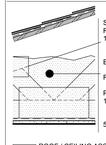
4" CONCRETE FLOOR
POLY VAPOR BARRIER
6" GRANULAR FILL

FC-5 FLOOR ASSEMBLY - SLAB

3/4" T&G FLOOR SHEATHING (SEE STRUCTURAL)
WOOD FLOOR JOISTS (SEE STRUCTURAL)

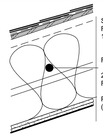
FC-6 FLOOR / CEILING ASSEMBLY

ROOF / CEILING TYPES



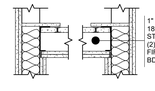
SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD ROOF SHEATHING (SEE STRUCTURAL)
ENGINEERED ROOF TRUSSES (SEE STRUCTURAL)
R-49 MIN LOOSE FILL FIBERGLASS INSULATION
POLY VAPOR RETARDER
1/2" RESILIENT CHANNELS, VERIFY SPACING W/ GYPSUM MANUFACTURER
5/8" TYPE C GYPSUM BOARD

RC-1 ROOF / CEILING ASSEMBLY UL# P533
(1-HR RATED) GA FILE # RC 2603



SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD ROOF SHEATHING (SEE STRUCTURAL)
ROOF JOISTS (SEE STRUCTURAL)
2X10 WOOD FURRING
R-49 MIN FIBERGLASS BATT INSULATION
POLY VAPOR RETARDER
(2) LAYERS 5/8" TYPE X GYPSUM BOARD

RC-2 ROOF / CEILING ASSEMBLY
(1 HR RATED) IBC # 21-1.1 [TABLE 721.1]



1" LINER PANEL
18 GAUGE 4" C-H STUDS @ 24" O.C.
(2) LAYERS 5/8" FIRECODE GYP. BD. TYPE C

RC-3 ROOF / CEILING ASSEMBLY
(2-HR RATED) AER-09038

KEYNOTES - WALL SECTIONS

5.05 DRAIN TILE IN GRAVEL BED, VERIFY W/ PLUMBING FOR CONNECTION & SIZE, TIE TILE PIPING INTO STORM SYSTEM.
5.06 SPRAY FOAM INSULATION AS REQUIRED (R-21 MIN.)
5.18 PRE-FAB ALUMINUM BALCONY, BY OTHERS
5.19 2X6 FRAMING @ 2'-0" O.C.
5.20 3/4" PLYWOOD ATTIC ACCESS WALKWAY COORD. WITH ROOF TRUSSES & ROOF PLAN
5.21 KEEP CENTER OPEN FOR SPRINKLER PIPING. COORDINATE W/ FIRE PROTECTION CONTACTOR
5.22 CONTINUOUS RIDGE VENT
5.25 VINYL PATIO DOOR OPENING AS SCHEDULED
5.28 LP CORNER TRIM

SANDMAN
Structural Engineers

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision & that I am a duly Licensed Architect under the laws of the State of Minnesota

Signature:

Printed Name: Tim Gillet

License No.: 51031

Date: 02/19/2021

Project No: 2037
Project Manager: DAS
Drawn By: NJT
Date: 02/19/2021

	Date	Description
2	03/09/2021	Addendum 2

hma ARCHITECTS
700 W. St. Germain Street
Suite 200
St. Cloud, MN 56301
www.hma-archs.com

T | 320.251.9155
F | 320.251.4919
hma@hma-archs.com

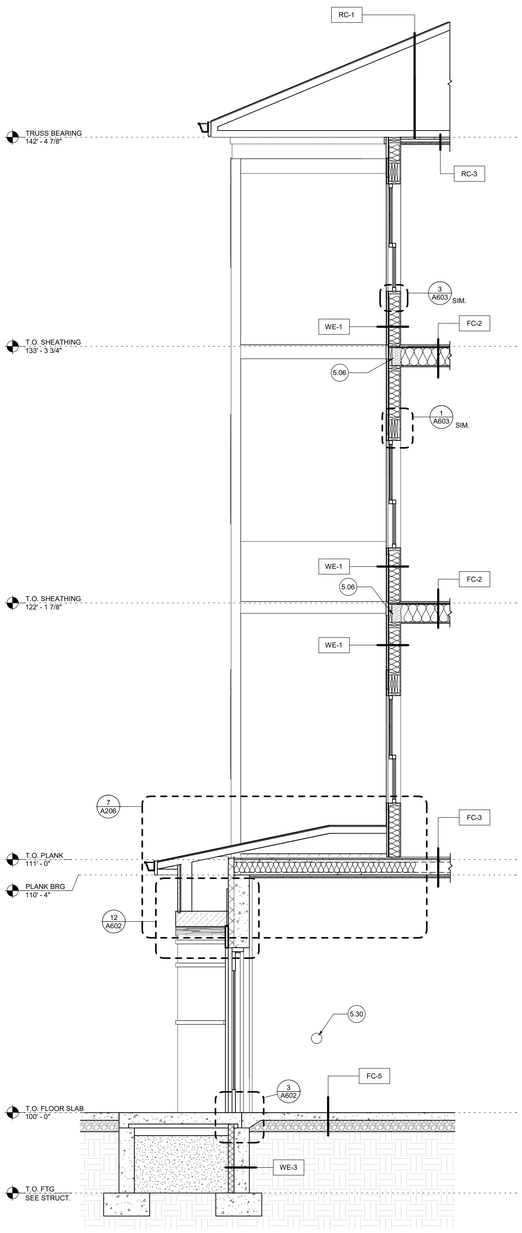
New Apartment Complex:

Zumbrota Apartment Complex

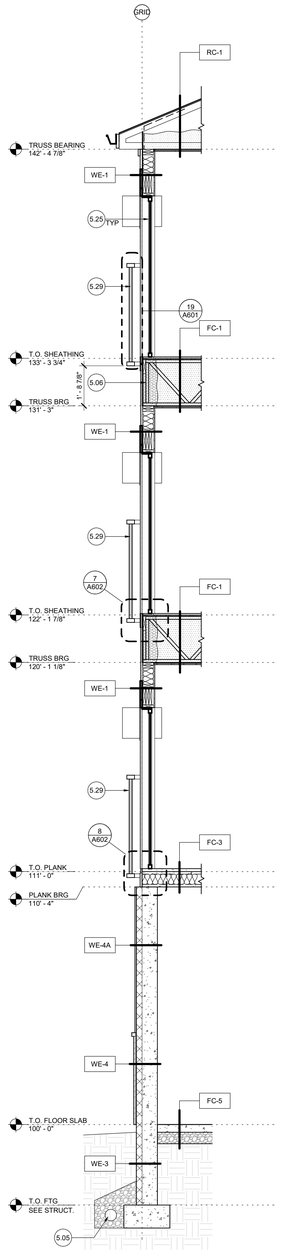
Zumbrota, MN

WALL SECTIONS

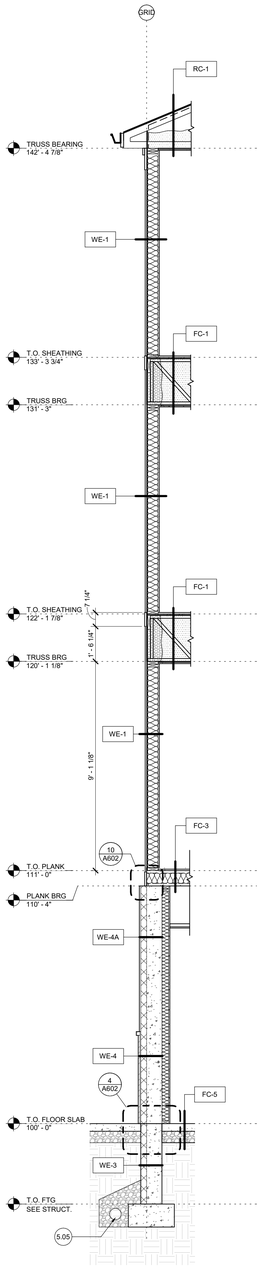
A505



1 WALL SECTION
A506 SCALE: 3/8" = 1'-0"

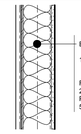


2 WALL SECTION
A506 SCALE: 3/8" = 1'-0"



3 WALL SECTION
A506 SCALE: 3/8" = 1'-0"

EXTERIOR WALL TYPES

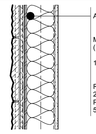


EXTERIOR SIDING / TRIM,
SEE ELEVATIONS
1/2" EXT. WALL SHEATHING
W/ INTEGRAL W.R.B.
(EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSUL.
2x6 WD. STUDS (SEE STRUCT.)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

WE-1 EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)

WE-1A EXTERIOR BEARING WALL - UL# U356
MOLD RESISTANT GYPSUM AT INTERIOR

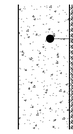
WE-1B EXTERIOR BEARING WALL - UL# U356
SIDING (1-HR RATED)
STAGGERED 2X6 FRMAING W/ CAVITY
FULL OF INSULATION (11" FRAMING DEPTH)



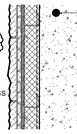
ADHERED SIMULATED STONE /
ADHERED THIN BRICK (DASHED),
SEE ELEVATIONS
MORTAR BED W/ METAL LATHE
(1) LAYER GRADE D EQUIVALENT
BUILDING WRAP / PAPER
1/2" EXTERIOR WALL SHEATHING
W/ INTEGRAL W.R.B. (GRADE D)
(EXP. 1, SEE STRUCT)
R-21 UNFACED BATT INSULATION
2x6 WD. STUDS (SEE STRUCTURAL)
POLY VAPOR RETARDER
5/8" GYP BOARD TYPE X

WE-2 EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)

WE-2A EXTERIOR BEARING WALL - UL# U356
ADHERED STONE / THIN BRICK (1-HR RATED)
MOLD RESISTANT GYPSUM BD. AT INTERIOR



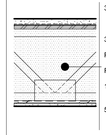
WE-3 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED)



WE-4 FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - TYPICAL

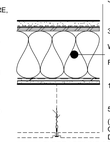
WE-4A FOUNDATION WALL - IBC # 4-1.1 [TABLE 721.1]
(3-HR RATED) - SIDING

FLOOR / CEILING TYPES



3/4" FLOOR TOPPING MIXTURE,
EXCEPT HARDSURFACES
USE 1/4" SOUNDMAT AND
3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING
(SEE STRUCTURAL)
PLATED WOOD TRUSSES
(SEE STRUCTURAL)
FILL TRUSS FULL W/ BLOWN
FIBERGLASS INSULATION
1/2" RESILIENT CHANNELS
@ 12" O.C., VERIFY W/
GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD

FC-1 FLOOR / CEILING ASSEMBLY UL# L558
(1-HR RATED) GA FILE # FC 5514



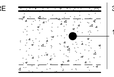
3/4" FLOOR TOPPING MIXTURE,
EXCEPT HARDSURFACES
USE 1/4" SOUNDMAT AND
3/4" MIN. TOPPING DEPTH
3/4" T&G FLOOR SHEATHING
(SEE STRUCTURAL)
WOOD FLOOR JOISTS
(SEE STRUCTURAL)
FILL JOIST SPACE FULL W/
UNFACED FIBERGLASS
BATT INSULATION
1/2" RESILIENT CHANNELS
@ 12" O.C., VERIFY W/
GYPSUM BOARD MANUF.
5/8" TYPE C GYPSUM BOARD

(SUSPENDED ACT WHERE
OCCURS, SEE CEILING PLANS -
DASHED)

FC-2 FLOOR / CEILING ASSEMBLY UL# L501
(1-HR RATED) GA FILE # FC 5420

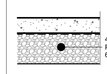
3/4" FLOOR TOPPING MIXTURE
(CCORD. WITH MANUF.
FOR RATING)
8" PRECAST FLOOR PLANK
(SEE STRUCTURAL),
MANUF. TO PROVIDE
EQUIVALENT THICKNESS
FOR RATING INDICATED

FC-3 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



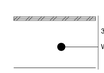
3/4" FLOOR TOPPING MIXTURE
(CCORD. WITH MANUF. FOR
RATING)
12" PRECAST FLOOR PLANK
(SEE STRUCTURAL)
MANUF. TO PROVIDE
EQUIVALENT THICKNESS
FOR RATING INDICATED

FC-4 FLOOR / CEILING ASSEMBLY UL# J919
(3-HR RATED)



4" CONCRETE FLOOR
POLY VAPOR BARRIER
6" GRANULAR FILL

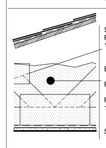
FC-5 FLOOR ASSEMBLY - SLAB



3/4" T&G FLOOR SHEATHING
(SEE STRUCTURAL)
WOOD FLOOR JOISTS
(SEE STRUCTURAL)

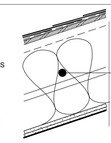
FC-6 FLOOR / CEILING ASSEMBLY

ROOF / CEILING TYPES



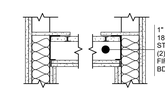
SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD
ROOF SHEATHING
(SEE STRUCTURAL)
ENGINEERED ROOF TRUSSES
(SEE STRUCTURAL)
R-49 MIN LOOSE FILL
FIBERGLASS INSULATION
POLY VAPOR RETARDER
1/2" RESILIENT CHANNELS,
VERIFY SPACING W/
GYPSUM MANUFACTURER
5/8" TYPE C GYPSUM BOARD

RC-1 ROOF / CEILING ASSEMBLY UL# P533
(1-HR RATED) GA FILE # RC 2603



SHINGLES
ROOFING UNDERLAYMENT
1/2" EXTERIOR PLYWOOD
ROOF SHEATHING
(SEE STRUCTURAL)
ROOF JOISTS
(SEE STRUCTURAL)
2X10 WOOD FURRING
R-49 MIN FIBERGLASS BATT
INSULATION
POLY VAPOR RETARDER
(2) LAYERS 5/8" TYPE X
GYPSUM BOARD

RC-2 ROOF / CEILING ASSEMBLY
(1 HR RATED) IBC # 21-1.1 [TABLE 721.1]



1" LINER PANEL
18 GAUGE 4" C-H
STUDS @ 24" O.C.
(2) LAYERS 5/8"
FIRECODE GYP.
BD. TYPE C

RC-3 ROOF / CEILING ASSEMBLY
(2-HR RATED) AER-09038

KEYNOTES - WALL SECTIONS

5.05 DRAIN TILE IN GRAVEL BED, VERIFY W/ PLUMBING FOR CONNECTION & SIZE, TIE TILE PIPING INTO STORM SYSTEM.
5.06 SPRAY FOAM INSULATION AS REQUIRED (R-21 MIN.)
5.25 VINYL PATIO DOOR OPENING AS SCHEDULED
5.29 JUILIET RAILING, SEE DETAILS FOR ADDITIONAL INFORMATION
5.30 ACTUATOR PAD, SEE ACCESSIBLE DETAILS FOR ADDITIONAL INFORMATION

SANDMAN
Structural Engineers

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision & that I am a duly Licensed Architect under the laws of the State of Minnesota

Signature:

Printed Name: Tim Gillet

License No.: 51031

Date: 02/19/2021

Project No: 2037
Project Manager: DAS
Drawn By: NJT
Date: 02/19/2021

	Date	Description
2	03/09/2021	Addendum 2

hma ARCHITECTS
700 W. St. Germain Street
Suite 200
St. Cloud, MN 56301
www.hma-archs.com

T | 320.251.9155
F | 320.251.4919
hma@hma-archs.com

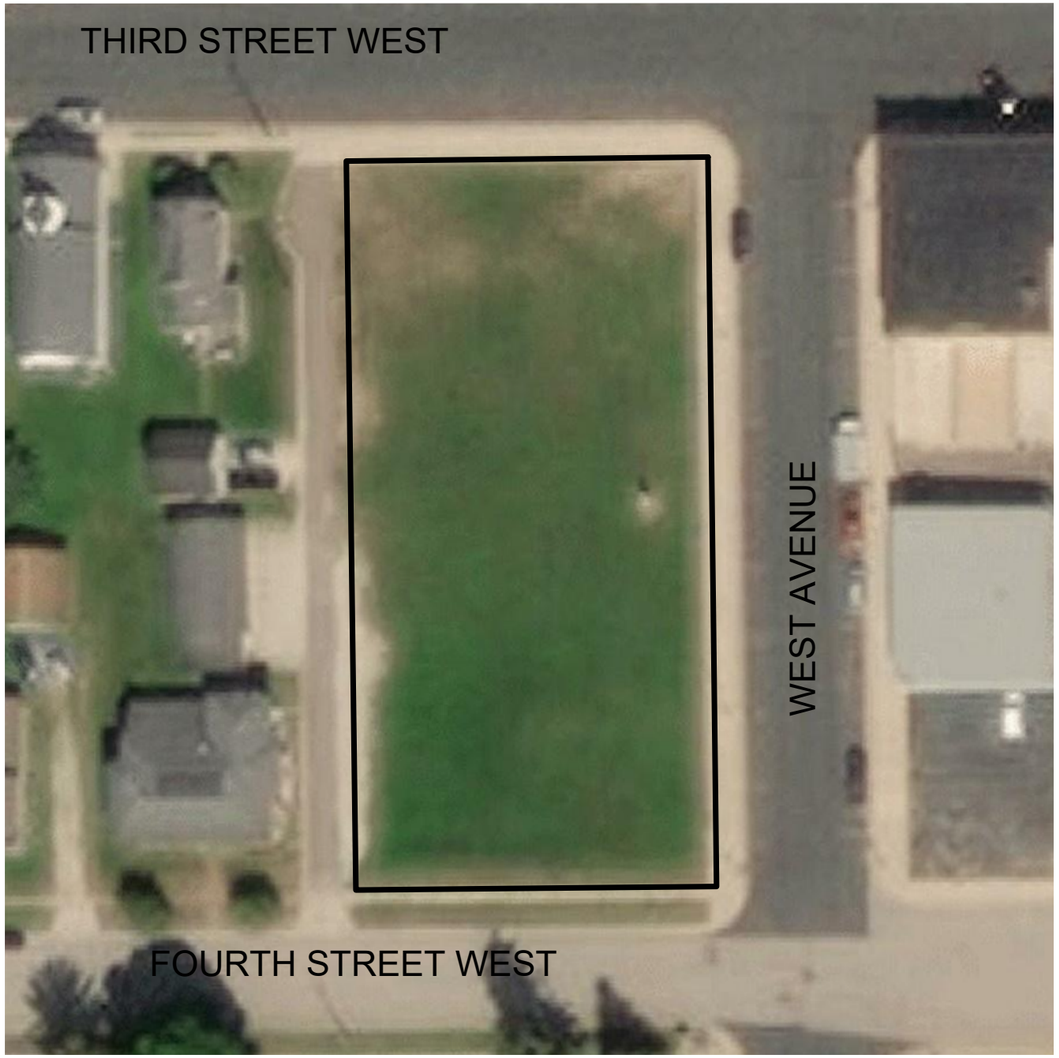
New Apartment Complex:

Zumbrota Apartment Complex

Zumbrota, MN

WALL SECTIONS

A506



EXISTING CONDITIONS AERIAL
AERIAL NOT TO SCALE

NORTH

NOTES

1.) NO CONSTRUCTION MAY BEGIN UNTIL EROSION AND SEDIMENT CONTROLS ARE IN PLACE AND APPROVED BY THE CITY OF ZUMBROTA.
2.) NO CONSTRUCTION MAY BEGIN UNTIL A PRECONSTRUCTION MEETING IS HELD WITH THE CITY OF ZUMBROTA.
3.) PREVAILING SPECIFICATIONS: CITY OF ZUMBROTA, MNDOT SPECIFICATIONS, CEAM SPECIFICATIONS.
4.) NO CHANGES SHALL BE MADE TO APPROVED PLANS WITHOUT WRITTEN CONSENT OF THE CITY OF ZUMBROTA.
5.) ONLY CITY OF ZUMBROTA EMPLOYEES ARE PERMITTED TO OPERATE VALVES AND HYDRANTS.
6.) ELEVATIONS FOR CONNECTING TO EXISTING STUBS FOR SANITARY SEWER, WATER, AND STORM SEWER WILL NEED TO BE FIELD VERIFIED.
7.) EXISTING "AS-BUILT" INFO IS FROM TOPOGRAPHIC SURVEY.

INDEX TO PLAN SHEETS

THIS PLAN CONTAINS 29 TOTAL SHEETS

SITE ADDRESS

300 WEST AVENUE
ZUMBROTA, MN 55992

SITE LEGAL DESCRIPTION

BLOCK 4, ORIGINAL PLAT OF ZUMBROTA, GOODHUE COUNTY, MINNESOTA.

ZONING

CURRENTLY ZONED: PUD

FLOOD INSURANCE RATE MAP

FIRM MAP NUMBER: 27049C0541E
EFFECTIVE DATE: SEPTEMBER 25, 2009

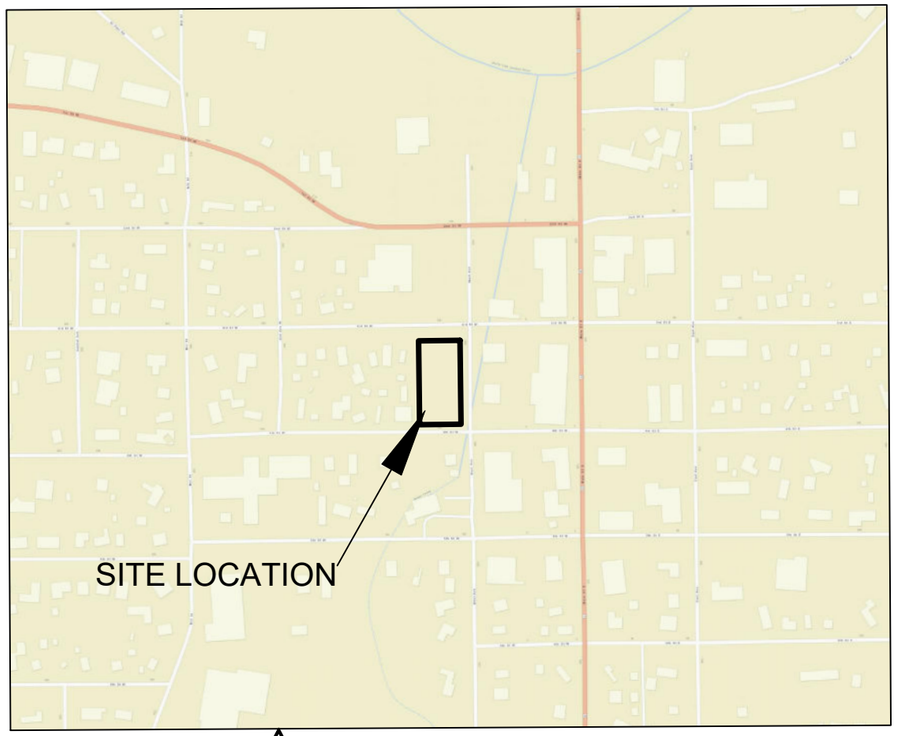
BENCHMARK

TOP NUT HYDRANT AT THE NORTHWEST QUADRANT OF WEST AVENUE, AND WEST FOURTH STREET
ELEVATION = 983.38

UTILITY CONTACTS

CITY OF ZUMBROTA PUBLIC WORKS.....507-732-7318
ZUMBROTA TELEPHONE COMPANY.....507-732-5103
MINNESOTA ENERGY.....800-889-9508
EXCEL ENERGY 507-732-5815
GOODHUE COUNTY CO-OP ELECTRICITY.....507-732-5117
CHARTER.....507-289-1611
FRONTIER.....866-497-3059

CALL BEFORE YOU DIG
GOPHER STATE ONE CALL
TWIN CITY AREA 651-454-0002
MN. TOLL FREE 1-800-252-1166



NORTH

VICINITY MAP
VICINITY MAP NOT TO SCALE

REVISION NOTES

⚠ ADDENDUM #2 3/11/2021
SHEET 1: INDEX TO PLAN SHEETS WAS UPDATED.
SHEET 2 : REJECT CURB ADDED TO LEGEND.
SHEET 5 : ALLEY CURB ADDED TO DEMOLITION.
SHEET 6 : ALL ENTRANCES AND PEDESTRIAN RAMPS REVISED. OUTSIDE PARKING REVISED TO ANGLED PARKING. CURB LOCATIONS AND DIMENSIONS REVISED FOR ENTRANCES AND PARKING AREA. NEW CURB WAS ADDED TO THE ALLEY.
SHEET 7 : GRADES WERE REVISED TO MATCH SITE PLAN REVISIONS. FREE BOARD NOTE ADDED.
SHEET 8 : CASTINGS AND RIM ELEVATIONS ADDED TO STRUCTURES. WATER LINE REALIGNED. ALL CATCH BASINS ARE TO BE REPLACED. MANUAL FLOOD VALVES ADDED TO SSFD1 AND SSFD2 FLOOR DRAINS.
SHEET 9 : FRAME AND GRATE INFORMATION ADDED TO STRUCTURES.
SHEETS 10-29 : ALL DETAILS HAVE BEEN UPDATED.
SHEET 29 : OUTSIDE DROP MANHOLE REVISED TO BE AN INSIDE DROP MANHOLE.
SHEET 30 : FREE BOARD NOTE ADDED.

PATH: S/SHARE/PLATS/CITY OF ZUMBROTA/BLOCK 4/CIVIL/CAD

Engineering, Surveying & Planning
JOHNSON & SCOFIELD INC.
1203 Main Street Red Wing, MN 55066
ph. 651.388.1558 fax 651.388.1559

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
Steven P. Voigt, PE
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DRAWN SPD
CHECKED SPV

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⚠ ADDENDUM #2	SPD	3/11/2021

LATEST REVISION:3-11-21
Prepared For:
ANDY BAARTMAN
A-1 CLEANING
P.O.B. 31
RED WING, MN 55066
PHONE: 651-301-5103

ZUMBROTA APARTMENTS

ZUMBROTA, MN

TITLE SHEET

SHEET 1 OF 29 SHEETS

BOUNDARY LINE

EXISTING CURB AND GUTTER

OHP — EXISTING OVERHEAD POWER LINE

EXISTING POWER POLE

S S — EXISTING STORM SEWER LINE

EXISTING STORM SEWER CATCH BASIN

MH — EXISTING STORM SEWER MANHOLE

W W — EXISTING WATER MAIN

EXISTING WATER MAIN GATE VALVE

EXISTING FIRE HYDRANT TO BE RELOCATED

SS — EXISTING SANITARY SEWER LINE

SS — EXISTING SANITARY SEWER MANHOLE

T — EXISTING TELEPHONE PEDESTAL TO BE RELOCATED

829 — EXISTING CONTOUR AND ELEVATION

×980.61 — EXISTING SPOT ELEVATION

PROPOSED BIO LOGS

PROPOSED INLET PROTECTION

PROPOSED SAW CUT

PROPOSED CURB AND GUTTER TO BE REMOVED

EXISTING CONCRETE

EXISTING BITUMINOUS

EXISTING CONCRETE TO BE REMOVED

EXISTING BITUMINOUS TO BE REMOVED

PROPOSED CONCRETE

PROPOSED BITUMINOUS

PROPOSED B624 CURB AND GUTTER

PROPOSED B624 CURB AND REJECT GUTTER

WTR — PROPOSED WATER MAIN

FH — PROPOSED FIRE HYDRANT

T — PROPOSED TELEPHONE PEDESTAL

S S — PROPOSED STORM SEWER

SW — PROPOSED STORM SEWER MANHOLE

PROPOSED ROOF RAIN CONNECTION

PROPOSED STORM SEWER CLEANOUT

PROPOSED SANITARY SEWER

SS SS — PROPOSED SANITARY SEWER FLOOR DRAIN

PROPOSED STORM SEWER FLOOR DRAIN

1.10% — PROPOSED GROUND SLOPE

CONC EL
FG: 982.41 — PROPOSED SPOT ELEVATION

TC:981.25
FL:981.16 — PROPOSED TOP OF CURB ELEVATION
PROPOSED FLOWLINE OF CURB ELEVATION

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EROSION CONTROL NOTES

CONTRACTOR SHALL INSTALL PERIMETER BIO-LOGS BEFORE START OF ANY CONSTRUCTION ACTIVITY. TO PREVENT SEDIMENT RUNOFF FROM REACHING THE CURB OR STREET RIGHT OF WAY, PERIMETER DOWNSLOPE BIO-LOGS SHALL BE INSTALLED. BIO-LOGS MUST BE DOUBLE ROWED. JOINTS IN THE SECOND ROW OF BIO-LOGS MUST BE STAGGERED FROM JOINTS IN THE FIRST ROW OF BIO-LOGS.

TO PREVENT TRACKING OF DIRT ONTO HARD SURFACE STREET RIGHT-OF-WAY, ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED AND MAINTAINED UNTIL VEHICLE ENTRANCES ONTO THE SITE ARE NO LONGER REQUIRED AND TOPSOIL IS SCHEDULED TO BE REPLACED. ALL VEHICLE ACCESS TO THIS SITE SHALL USE THE ROCK CONSTRUCTION ENTRANCES. SHOULD THE ROCK CONSTRUCTION ENTRANCES BECOME INEFFECTIVE DUE TO EXCESSIVE SOIL CONTAMINATION, THEY SHALL BE REMOVED AND REPLACED. SEE DETAIL.

THE CONTRACTOR SHALL SALVAGE SUFFICIENT TOPSOIL TO PROVIDE COVER AFTER GRADING OPERATIONS. ALL SOIL STOCKPILES AND FINISHED GRADED AREAS ARE TO BE SEEDED IMMEDIATELY IN ORDER TO ESTABLISH VEGETATION WITH WHEAT OR RYE GRASS @ 100 LB./ACRE DURING CONSTRUCTION. INSTALL AND MAINTAIN APPROVED INLET PROTECTION AT ALL ACTIVE STORM SEWER INLETS. SEE DETAILS. SEDIMENT RUNOFF SHOULD BE MINIMIZED BY RESPONSIBLE SITE EROSION CONTROL. EROSION CONTROL MEASURES MUST BE INSPECTED BY THE CITY BEFORE ANY GRADING ACTIVITY BEGINS. TO PREVENT SILT AND SEDIMENT FROM ENTERING THE STORM SEWER SYSTEM, A FILTER BAG INSERT, SEDIMENT CONTROL INLET HAT, ROCK LOG RING OR OTHER DEVICE APPROVED BY THE CITY, SHALL BE INSTALLED AT THE INLET. THE CONTRACTOR MAY DECIDE TO REMOVE ALL TOPSOIL FROM THE SITE, AND IMPORT BEFORE TURF ESTABLISHMENT.

ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED AS SOON AS POSSIBLE. AREAS THAT HAVE BEEN DISTURBED OR AT FINISH GRADE, BUT HAVE NO ACTIVE WORK, SHALL BE SEEDED AND MULCHED OR SODDED WITHIN 14 DAYS, EXCEPT ON SLOPES STEEPER THAN 4H:1V. STEEPER SLOPES SHALL BE SEEDED AND COVERED WITH AN EROSION CONTROL BLANKET OR SEEDED AND MULCHED WITH A TACKIFYING AGENT OR SODDED. AS SOON AS POSSIBLE AFTER GRADING OPERATIONS HAVE BEEN COMPLETED, TOPSOIL SHALL BE SPREAD AND THE ENTIRE SITE SHALL BE VEGETATED. FINAL SITE STABILIZATION SHALL BE EVIDENT WHEN SEEDED GRASS IS PRESENT ON ALL EXPOSED GRADING AREAS AND HAS GROWN TO A LENGTH OF 6 INCHES AND THERE ARE NO SIGNS OF ONGOING EROSION. IF SOD IS PLACED IN-LIEU OF SEED, IT SHALL BE WATERED AND MAINTAINED AND SHOW NO SIGNS OF STRESS FOR AT LEAST 30 DAYS. THE CITY SHALL APPROVE FINAL SITE STABILIZATION.

A NPDES STORM WATER PERMIT FOR CONSTRUCTION IS NOT REQUIRED FOR THIS PROJECT.

DEMOLITION NOTES

ALL ASPHALT TO REMAIN SHALL BE SAW CUT AT LIMITS OF REMOVAL.

REMOVE ALL DEMOLITION AND SALVAGED MATERIALS FROM SITE WITHIN 24 HOURS.

LOCATE AND PROTECT ALL UTILITY LINES PRIOR TO AND DURING DEMOLITION AND GRADING OPERATIONS. UTILITY LOCATIONS SHOWN ARE BASED ON BEST AVAILABLE INFORMATION AND ARE NOT GUARANTEED. THE CITY MAY REQUIRE A DISCONNECT PERMIT FOR SEWER AND WATER SERVICES.

CONTACT PRIVATE UTILITY SERVICE FOR ALL OTHER DISCONNECTS.

CONTACT PRIVATE UTILITY SERVICES FOR REROUTES.

SITE PLAN NOTES

ALL RADII AND PAVEMENT LENGTHS ARE TO THE EDGE OF BITUMINOUS AND CONCRETE OR TO THE FACE OF CURB UNLESS OTHERWISE NOTED.

DRIVEWAYS AND APRONS SHALL BE 8" CONCRETE.

SEE DETAILS FOR CONCRETE AND BITUMINOUS SECTIONS.

SEE ARCHITECTURAL DRAWINGS FOR BUILDING DIMENSIONS.

ALL EXTERIOR PARKING SPACES SHALL BE 60 DEGREE STALLS THAT ARE 9' WIDE AND 22' DEEP.

A GOPHER STATE ONE CALL WAS NOT MADE FOR THE DESIGN SURVEY. SURFACE EVIDENCE OF UTILITIES SUCH AS PEDESTALS, VALVES OR MANHOLES WERE LOCATED.

THE CONTRACTOR MUST COORDINATE WITH GOPHER STATE ONE TO LOCATE ALL UTILITIES.

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ZUMBROTA APARTMENTS

ZUMBROTA, MN

TITLE SHEET

SHEET 3 OF 29 SHEETS

GRADING NOTES

AS SOON AS POSSIBLE AFTER GRADING OPERATIONS HAVE BEEN COMPLETED, TOPSOIL SHALL BE SPREAD AND THE ENTIRE SITE SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICABLE TO MINIMIZE EROSION. FINAL SITE STABILIZATION SHALL BE EVIDENT WHEN SEEDED GRASS IS PRESENT ON ALL EXPOSED GRADING AREAS AND HAS GROWN TO A LENGTH OF 6 INCHES AND THERE ARE NO SIGNS OF ONGOING EROSION. IF SOD IS PLACED IN-LIEU OF SEED, IT SHALL BE WATERED AND MAINTAINED AND SHOW NO SIGNS OF STRESS FOR AT LEAST 30 DAYS.

UTILITY NOTES

WATERMAIN SHALL BE DUCTILE IRON CONFORMING TO AWWA C151 . ALL FITTINGS SHALL BE MECHANICAL DUCTILE IRON CONFORMING TO ASME B16.4, AWA C110, AWWA C153. (SEE MINNESOTA PLUMBING CODE CHAPTER 6, TABLE 604.1)

ALL WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PER MINNESOTA RULES, PART 4715.2250 AND AWWA STANDARD C651.

A MINIMUM HORIZONTAL SEPARATION OF 10 FEET MUST BE MAINTAINED BETWEEN WATER SERVICE AND ANY SEWER WHENEVER POSSIBLE. A MINIMUM VERTICAL SEPARATION OF 18 INCHES MUST BE MAINTAINED BETWEEN WATER SERVICE AND ANY SEWER. THE WATER SERVICE SHALL NOT CONTAIN ANY JOINTS OR CONNECTIONS WITHIN 10 FEET OF THE CROSSING.

SEWERS CROSSING WHICH ARE NOT AT LEAST 12 INCHES BELOW A WATER SERVICE MUST BE CONSTRUCTED OF MATERIALS APPROVED FOR USE WITHIN A BUILDING (SEE SECTIONS 609.2, 720.1, AND TABLE 701.1). THE WATER SERVICE SHOULD NOT CONTAIN ANY JOINTS OR CONNECTIONS WITHIN 10 FEET OF THE CROSSING.

A MINIMUM 4" OF EXTRUDED POLYSTYRENE BOARD INSULATION SHALL BE INSTALLED ANYTIME WATER LINE CROSSES SANITARY SEWER, STORM SEWER, OR SUBDRAIN SYSTEM.

PVC SANITARY AND STORM SEWERS MUST MEET ONE OF THE FOLLOWING ASTM STANDARDS: D1785, D2665, D3034,F789, F794, F891, F949, OR F1488 (SEE TABLE 701.1 AND INSTALLATION STANDARD 1). FITTINGS MUST COMPLY WITH ASTM D1866, D2665, OR F794 RESPECTIVELY. JOINTS MUST BE APPROVED MECHANICAL OR PUSH-ON UTILIZING AN ELASTOMERIC SEAL, OR SOLVENT WELDED USING ASTM F656 PURPLE PRIMER AND ASTM D2564 SOLVENT CEMENT. THE INSTALLATION MUST COMPLY WITH ASTM D2321, WHICH REQUIRES OPEN-TRENCH INSTALLATION ON A CONTINUOUS GRANULAR BED. ASTM F679 PVC MAY BE USED FOR STORM SEWERS IF APPROVED BY THE LOCAL BUILDING OFFICIAL PRIOR TO INSTALLATION (SEE SECTION 301.2).

CONCRETE MANHOLES AND SEWER LINES SHALL BE TESTED BY NEGATIVE PRESSURE PER ASTM C1214-13, ASTM C1244-11, OR HYDROSTATICALLY PER "MN RULES 4714", SECTION 1109.2.2 (SEE ALSO SECTION 712.4).

INLET AND OUTLET CONNECTIONS TO SEWER MANHOLES MUST USE FLEXIBLE COMPRESSION JOINTS LOCATED BETWEEN 12 AND 36 INCHES FROM THE MANHOLE (SEE SECTION 719.6). WHERE PERMITTED BY THE ADMINISTRATIVE AUTHORITY AS AN ALTERNATE INSTALLATION METHOD, APPROVED RESILIENT RUBBER JOINTS MAY BE USED TO MAKE WATERTIGHT CONNECTIONS TO MANHOLES, CATCH BASINS, AND OTHER STRUCTURES (SEE SECTION 301.2).

THE PLUMBING SYSTEM AND THE STORM SYSTEM WITHIN 10 FEET OF THE BUILDING OR WATER SERVICE LINE MUST BE TESTED PER "MN RULES 4714", SECTIONS 609.4, 712.0, AND 1109.0.

ALL PVC INLET AND OUTLET CONNECTIONS TO A CONCRETE STRUCTURE SHALL BE MADE BY THE USE OF A FLEXIBLE COMPRESSION JOINT NOT LESS THAN 12 INCHES AND NOT EXCEEDING 3 FEET FROM THE MANHOLE. NO FLEXIBLE COMPRESSION JOINTS SHALL BE EMBEDDED IN THE MANHOLE BASE.

PROPOSED ELECTRIC INSTALLATION MUST BE COORDINATED WITH EXCEL. EXCEL STANDARDS SHALL BE FOLLOWED.

PROPOSED GAS INSTALLATION MUST BE COORDINATED WITH EXCEL. EXCEL STANDARDS SHALL BE FOLLOWED.

ALL CLEANOUTS IN PAVED AREAS SHALL BE PLACED IN A VALVE BOX. TOP OF VALVE BOX SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE.

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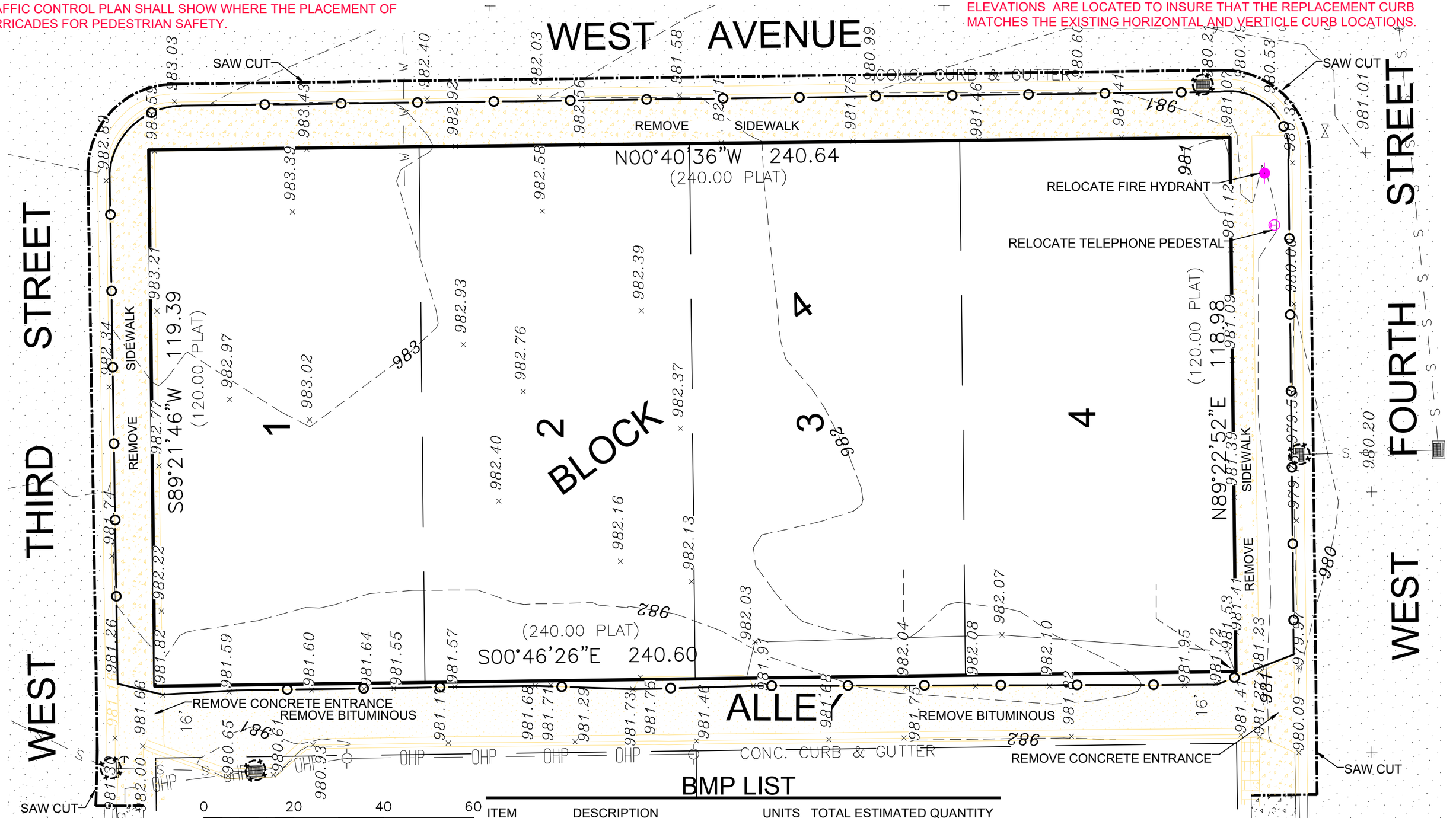
ZUMBROTA APARTMENTS
ZUMBROTA, MN

TITLE SHEET

NOTE: PRIOR TO ANY SIDEWALK OR CURB DEMOLITION THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY FOR APPROVAL.THE TRAFFIC CONTROL PLAN SHALL SHOW WHERE THE PLACEMENT OF BARRICADES FOR PEDESTRIAN SAFETY.

NOTE: PRIOR TO ANY CURB DEMOLITION THE CONTRACTOR SHALL COORDINATE WITH THE SURVEYOR TO ASSURE THAT ENOUGH EXISTING SPOT ELEVATIONS ARE LOCATED TO INSURE THAT THE REPLACEMENT CURB MATCHES THE EXISTING HORIZONTAL AND VERTICLE CURB LOCATIONS.



BMP LIST

ITEM	DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITY
1	BIO LOGS	LF	770
2	INLET PROTECTION	EA	4

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ZUMBROTA APARTMENTS

ZUMBROTA, MN

EXISTING CONDITIONS EROSION CONTROL AND DEMOLITION PLAN

PEDISTRIAN CURB RAMP 1 SEE SHEETS 11-17 FOR DETAILS AND ELEVATIONS

PROPOSED 2' WIDE BITUMINOUS PATCH

PROPOSED CONCRETE B624 CURB AND GUTTER

PEDISTRIAN CURB RAMP2 SEE SHEETS 11-17 FOR DETAILS AND ELEVATIONS

A24.00 R15.25

A23.99 R15.25

233.48

PROPOSED CONCRETE SIDEWALK

232.09

10.00'

A2.35 R3.00

A2.37 R3.00

A2.40 R3.00

A2.32 R3.00

29.08

12.50'

14.00'

16.00'

13.97'

12.50'

SEE CONCRETE DRIVE APPROACH DETAIL

SEE CONCRETE DRIVE APPROACH DETAIL

17.30

16.00'

17.28

12.50'

PROPOSED PARALLEL DRIVEWAY - SEE DETAILS

PROPOSED CONCRETE B624 CURB AND GUTTER

PROPOSED 2' WIDE BITUMINOUS PATCH

PROPOSED PARALLEL DRIVEWAY - SEE DETAILS

128.98

39.11

41.08

142.27

25.08

2.67

8.45

5.85

7.72

5.00'

49.29

10.00'

PROPOSED ONE WAY, AND DO NOT ENTER SIGNS

PROPOSED CONCRETE B624 CURB AND GUTTER

4.61'

19.80

6.01

62.49

PROPOSED CONCRETE SIDEWALK

PEDISTRIAN CURB RAMP 3 SEE SHEETS 11-17 FOR DETAILS AND ELEVATIONS

10.00

B624 CURB AND REJECT GUTTER

17.30

135.10

23.60

19.05'

22.00'

9.00'

16.80

PROPOSED CONCRETE B624 CURB AND GUTTER

12.50

12.50'

71.11

87.08

A3.14 R3.00

A6.28 R3.00

11.01

12.50'

PROPOSED BITUMINOUS

PROPOSED CONCRETE B624 CURB AND GUTTER 18.11'

18.12'

PROPOSED PARALLEL DRIVEWAY - SEE DETAILS

PEDISTRIAN CURB RAMP 4 SEE SHEETS 11-17 FOR DETAILS AND ELEVATIONS

15.14'

18.05'

15.09'

A2.63 R3.67

19.24

9.05

5.71

A1.60 R2.33

208.06

12.26

12.50'

PROPOSED ONE WAY SIGN

A0.89 R2.33

PROPOSED 3.0' CURB TAPPER

PROPOSED 3' CURB TAPPER

12.50'

NORTH

0 20 40 60

SCALE 1"=20'

LOT AREA.....0.66 ACRES (28,678 SF)
EXISTING IMPERVIOUS.....0 SF (0%)
PROPOSED BUILDING FOOTPRINT.....17,993 SF
PROPOSED CONCRETE.....2,627 SF
PROPOSED BITUMINOUS.....2,975 SF
TOTAL PROPOSED IMPERVIOUS AREA.....0.54 ACRES, 23,595 SF (82%)
TOTAL PROPOSED GREEN SPACE.....0.12 ACRES, 5,083 SF (18%)
*THESE AREAS ONLY INCLUDE SURFACES INSIDE THE PROPERTY BOUNDARY

CALL BEFORE YOU DIG
GOPHER STATE ONE CALL
TWIN CITY AREA 651-454-0002
MN. TOLL FREE 1-800-252-1166

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ZUMBROTA APARTMENTS

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SITE PLAN

SHEET 6 OF 29 SHEETS

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NOTE: BASE FLOOD ELEVATION IS 981.50

NORTH

0 20 40 60
SCALE 1"=20'

PEDISTRIAN CURB RAMP 1
SEE SHEETS 11-17 FOR DETAILS AND ELEVATIONS

PEDISTRIAN CURB RAMP2
SEE SHEETS 11-17 FOR DETAILS AND ELEVATIONS

PEDISTRIAN CURB RAMP 4
SEE SHEETS 11-17 FOR DETAILS AND ELEVATIONS

PEDISTRIAN CURB RAMP 3
SEE SHEETS 11-17 FOR DETAILS AND ELEVATIONS

NOTE: THE PROPOSED CURB ELEVATIONS SHALL MATCH THE EXISTING CURB PRIOR TO DEMOLITION.

NOTE: 1.73' FREE BOARD BETWEEN FFE AND ALLEY CATCH BASIN.

HIGH POINT CONC EL FG: 982.65
CONC:982.58 HP
FLOOR DRAIN:982.53
FLOOR DRAIN:982.12
CONC:982.25 HP
FLOOR DRAIN:981.53
CONC:981.66 HP
FLOOR DRAIN:980.93
CONC:981.06 HP
FLOOR DRAIN:980.16
HIGH POINT CONC EL FG: 980.27
CONC EL FG: 980.26
CONC EL FG: 980.25
CONC EL FG: 980.38
CONC EL FG: 982.41
CONC EL FG: 982.42
CONC EL FG: 982.40
CONC EL FG: 983.17
CONC EL FG: 983.18
DOORWAY FFE 980.86
DOORWAY FFE 983.36
FFE 982.43
GROUND EL FG: 983.69
GROUND EL FG: 983.06
GROUND EL FG: 983.11
GROUND EL FG: 982.80
GROUND EL FG: 982.31
GROUND EL FG: 982.30
GROUND EL FG: 982.20
GROUND EL FG: 983.00
GROUND EL FG: 981.57
GROUND EL FG: 981.00
GROUND EL FG: 980.70
GROUND EL FG: 983.53
GROUND EL FG: 983.32
GROUND EL FG: 983.03
GROUND EL FG: 982.81
GROUND EL FG: 982.47
GROUND EL FG: 982.26
GROUND EL FG: 982.02
GROUND EL FG: 981.90
GROUND EL FG: 981.24
GROUND EL FG: 983.39
GROUND EL FG: 983.56
GROUND EL FG: 983.26
GROUND EL FG: 983.20
GROUND EL FG: 983.12
GROUND EL FG: 982.62
GROUND EL FG: 982.18
GROUND EL FG: 982.27
GROUND EL FG: 983.20

BIT:983.25 BIT:983.22 BIT:983.12 BIT:983.00 BIT:982.09 BIT:981.03 BIT:980.68 BIT:980.51 BIT:980.56 BIT:980.57 BIT:981.28 BIT:981.20 BIT:982.42 BIT:980.04 BIT:980.13

TC:983.53 FL:983.03 TC:982.91 FL:982.40 TC:982.56 FL:982.03 TC:982.08 FL:981.58 TC:981.47 FL:980.99 TC:980.85 FL:980.35 TC:980.18 FL:979.75 TC:980.37 FL:979.87 TC:979.95 FL:979.95 TC:980.08 FL:980.08 TC:980.65 FL:980.15 TC:980.29 FL:980.29 TC:980.99 FL:980.49 TC:980.10 FL:980.10 TC:980.36 FL:980.36 TC:980.67 FL:980.17 TC:980.60 FL:980.10 TC:980.45 FL:980.23 TC:983.38 FL:982.88 TC:983.25 FL:982.75 TC:982.60 FL:982.60 TC:982.37 FL:982.37 TC:982.68 FL:982.18 TC:982.21 FL:981.74 TC:981.97 FL:981.47 TC:981.26 FL:981.26 TC:981.81 FL:981.81 TC:981.11 FL:981.11 TC:981.76 FL:981.26 TC:981.33 FL:981.33 TC:981.15 FL:980.65 TC:981.11 FL:980.61 TC:981.43 FL:980.93 TC:981.40 FL:980.90 TC:981.87 FL:981.34 TC:982.16 FL:981.66 TC:982.25 FL:981.75 TC:982.41 FL:981.91 TC:982.10 FL:981.60 TC:982.09 FL:981.59 TC:982.12 FL:981.62 TC:982.24 FL:981.74 TC:982.17 FL:981.67 TC:982.18 FL:981.68 TC:982.32 FL:981.82

1.5% 2.0% 0.33% 1.0% 0.50% 1.76% 2.78% 2.81% 3.86% 1.39%

984 983 982 981 986 980

UHP

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ZUMBROTA APARTMENTS
ZUMBROTA, MN

GRADING PLAN

SHEET 7 OF 29 SHEETS

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SSMH1
F&I 48" MANHOLE
F&I NEENAH FRAME AND LID R-1429-CU OR EQUAL
RIM ELEV: 983.40
F&I 6" OUTSIDE DROP FROM SSFD4
UPPER DROP INV:972.98
LOWER DROP INV IN: 968.92
6" SDR 26 SERVICE FROM BUILDING
PLUMBING INV IN: 968.92
EXISTING 6" INV OUT : 968.82
SANITARY SERVICE LOCATION IS
APPROXIMATE, AND MUST BE FIELD VERIFIED.

CUT EXISTING 6" D.I.P.
F&I 6" D.I.P. 90° BEND
F&I CONCRETE THRUST BLOCK
F&I 6.4 L.F. 6" D.I.P.

F&I 6" D.I.P. 90° BEND
F&I CONCRETE THRUST BLOCK
F&I 5 L.F. 6" D.I.P.

F&I 6" D.I.P. GATE VALVE
F&I VALVE BOX
F&I 4.8 L.F. 6" D.I.P.

CONNECT 6" D.I.P. WATER MAIN TO BUILDING.

CONNECT 6" SCH 40 PVC SANITARY SEWER TO BUILDING PLUMBING.

STCB2
REPLACE EXISTING CATCH BASIN, FRAME, AND GRATE
GRATE: 980.25
EXISTING 12" RCP INV: 976.57
PROPOSED 12" ADS INV: 976.67
F&I 15.5 LF 12" SDR26 @ 1.0% TO STRD 6

RELOCATED FIRE HYDRANT

RELOCATED TELEPHONE PEDESTAL

F&I. 37 L.F. 6" SCH 40 PVC @ 1.0%

F&I. 35.8 L.F. 6"SCH 40 PVC @ 1.0%

SSFD 4
F&I FLOOR DRAIN-SEE ARCH. PLANS
GRATE :982.12
12" SCH 40 PVC INV IN:973.43
12" SCH 40 PVC INV OUT:973.33

F&I. 49.9 L.F. 6" SCH 40 PVC @ 1.0%

SSFD 5
F&I FLOOR DRAIN-SEE ARCH. PLANS
GRATE :982.53
6" SCH 40 PVC INV:973.78

F&I. 52.2 L.F. 12" SDR26 @ 1.0%

SSFD 3
F&I FLOOR DRAIN-SEE ARCH. PLANS
GRATE :981.53
6" SCH 40 PVC INV:973.95

SSFD 1
F&I FLOOR DRAIN-SEE ARCH. PLANS
F&I MANUAL FLOOD SHUT OFF VALVE
GRATE :980.16
12" SCH 40 PVC INV:975.00

F&I. 49.3 L.F. 12" SCH 40 PVC @ 1.0%

SSFD 2
F&I FLOOR DRAIN-SEE ARCH. PLANS
F&I MANUAL FLOOD SHUT OFF VALVE
GRATE :980.93
12" SCH 40 PVC INV:974.50

STCB1
REPLACE EXISTING CATCH BASIN, FRAME, AND GRATE. SEE DETAILS.
GRATE: 979.53
EXISTING 12" RCP INV: 976.63
PROPOSED 12" SDR26 INV: 976.73
F&I 8 LF 12" SDR26 @ 0.50%
TO STMH 1

STCB 4
F&I CATCH BASIN
F&I NEENAH FRAME AND GRATE R-3070 OR EQUAL
GRATE:980.10
IN 12" SDR26 NE INV: 976.27
OUT 12" SDR26 NE INV: 977.17
F&I 33.0 LF 12" SDR26 @ 1%
TO STRD4

STCB5
REPLACE EXISTING CATCH BASIN, FRAME, AND GRATE SEEDEATILS
GRATE: 981.02
EXISTING 10" RCP INV: 975.04
EXISTING 12" PVC INV: 974.89
PROPOSED 12" SDR26 INV: 975.04
F&I 15 LF 12" SDR26 @ 1.0% TO STCO 1

STCB4
REPLACE EXISTING CATCH BASIN, FRAME, AND GRATE SEE DETAILS
GRATE: 980.70
EXISTING 10" RCP INV: 975.75

NOTE: EXISTING UTILITY ELEVATIONS ARE FROM AS-BUILT PLANS. ALL CONNECTION ELEVATIONS MUST BE FIELD VERIFIED.

NORTH

0 20 40 60
SCALE 1"=20'

Engineering, Surveying & Planning
JOHNSON & SCOFIELD INC.
1203 Main Street Red Wing, MN 55066
ph. 651.388.1558 fax 651.388.1559

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Steven P. Voigt, PE
DATE 3-3-2021 REG. NO. 20034

DESIGNED SPD\SPV
DRAWN SPD
CHECKED SPV

REVISED	BY	DATE
ADDENDUM #2	SPD	3/11/2021

LATEST REVISION:3-11-21
Prepared For:
ANDY BAARTMAN
A-1 CLEANING
P.O.B. 31
RED WING, MN 55066
PHONE: 651-301-5103

ZUMBROTA APARTMENTS
ZUMBROTA, MN

UTILITY PLAN

SHEET 8 OF 29 SHEETS

CALL BEFORE YOU DIG
GOPHER STATE ONE CALL
TWIN CITY AREA 651-454-0002
MN. TOLL FREE 1-800-252-1166

STRD 20
F&I 6" X 12" ADS WYE
WYE INV: 977.95
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 16.8 LF 12" SDR26 @ 1.0% TO STRD 21

STRD 17
F&I 6" X 12" SDR26 WYE
WYE INV: 977.40
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 17.5 LF 12" SDR26 @ 1.0% TO STRD 18

STCB2
REPLACE EXISTING CATCH BASIN, FRAME, AND GRATE
GRATE: 980.25
EXISTING 12" RCP INV: 976.57
PROPOSED 12" ADS INV: 976.67
F&I 15.5 LF 12" SDR26 @ 1.0% TO STRD 6

STRD 21
F&I 6" X 12" SDR26 WYE
WYE INV: 978.12
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 17.5 LF 12" SDR26 @ 1.0% TO STRD 22

STRD 18
F&I 6" X 12" SDR26 WYE
WYE INV: 977.57
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 16.9 LF 12" SDR26 @ 1.0% TO STRD 19

STCO 2
F&I 12" SDR26 45° BEND
12" SDR INV: 976.84
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 31.1 LF 12" SDR26 @ 1.0% TO STRD 16

STRD 24
F&I 12" SDR26 45°BEND
WYE INV: 978.81
SEE ROOF DRAIN DETAIL ON SHEET 16

STRD 15
F&I 6" X 12" SDR26 WYE
WYE INV: 976.83
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 1.5 LF 12" SDR26 @ 1.0% TO STCO 2

STRD 23
F&I 6" X 12" SDR26 WYE
WYE INV: 978.54
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 26.8 LF 12" SDR26 @ 1.0% TO STRD 24

STRD 22
F&I 6" X 12" SDR26 WYE
WYE INV: 978.29
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 24.8 LF 12" SDR26 @ 1.0% TO STRD 23

STRD 19
F&I 6" X 12" ADS WYE
WYE INV: 977.74
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 20.8 LF 12" SDR26 @ 1.0% TO STRD 20

STRD 16
F&I 6" X 12" SDR26 WYE
WYE INV: 977.15
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 24.7 LF 12" SDR26 @ 1.0% TO STRD 17

STRD 2
F&I 12"" SDR 26 45° BEND
12" SDR26 INV: 977.31
F&I 12"X6" REDUCERSEE ROOF DRAIN DETAIL ON SHEET 16

STRD 14
F&I 6" X 12" SDR26 WYE
WYE INV: 976.17
SEE ROOF DRAIN DETAIL ON SHEET 16

STRD 1
F&I 6" X 12" SDR26 WYE
WYE INV: 976.99
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 32.0 LF 12" SDR26 @ 1% TO STRD2

STCB1
REPLACE EXISTING CATCH BASIN, FRAME, AND GRATE. SEE DETAILS.
GRATE: 979.53
EXISTING 12" RCP INV: 976.63
PROPOSED 12" SDR26 INV: 976.73
F&I 8 LF 12" SDR26 @ 0.50% TO STMH 1

STRD 7
F&I 6" X 12"SDR26 WYE
WYE INV: 978.23
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 21.3 LF 12" SDR26 @ 1.0% TO STRD 8

STRD 4
F&I 15° BEND
F&I 6" X 12" ADS WYE
WYE INV:977.60
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 17.5 LF 12" SDR26 @ 1.0% TO STRD 5

STRD 3
F&I 6" X 12" SDR26 WYE
WYE INV: 976.99
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 18.0 LF 12" SDR26 @ 1.0% TO STCB 4

STRD 13
F&I 6" X 12" SDR26 WYE
WYE INV: 975.89
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 28 LF 12" SDR26 @ 1.0% TO STRD 14

STRD 9
F&I 6" X 12" SDR26 WYE
WYE INV: 978.62
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I VALVE BOX

STMH1
F&I 48" MANHOLE
F&I NEENAH FRAME AND LID R-1452-BV OR EQUAL
RIM ELEV: 980.39
IN 12" SDR26 NW INV :976.91
F&I 4.7 LF 12" SDR26 @ 1% TO STRD1
IN 12" SDR26 NE INV :976.91
F&I 7.5 LF 12" SDR26 @ 1% TO STRD3
OUT 12" SDR26 INV:976.81

STRD 12
F&I 6" X 12" SDR26 WYE
WYE INV: 975.68
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 21 LF 12" SDR26 @ 1.0% TO STRD 13

STW 1
F&I 12" SDR26 WYE
WYE INV: 975.29
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I VALVE BOX
F&I 25 LF 12" SDR26 @ 1.0% TO STRD 10
F&I 39 LF 12" SDR26 @ 1.0% TO STRD 12

STRD 8
F&I 6" X 12" SDR26 WYE
WYE INV: 978.54
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 17 LF 12" SDR26 @ 1.0% TO STRD 9

STRD 6
F&I 6" X 12" SDR26 WYE
WYE INV: 978.06
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 16.9 LF 12" SDR26 @ 1.0% TO STRD 7

STRD 5
F&I 6" X 12" SDR26 WYE
WYE INV: 977.78
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I 28.7 LF 12" SDR26 @ 1.0% TO STRD 6

STCB 4
F&I CATCH BASIN
F&I NEENAH FRAME AND GRATE R-3070 OR EQUAL
GRATE:980.10
IN 12" SDR26 NE INV: 976.27
OUT 12" SDR26 NE INV: 977.17
F&I 33.0 LF 12" SDR26 @ 1% TO STRD4

STCO 1
F&I 12" SDR26 45° BEND
BEND INV: 975.21
F&I CLEANOUT
F&I VALVE BOX
F&I 9 LF 12" SDR26 @ 1.0% TO STW 1

STRD 10
F&I 6" X 12" SDR26 WYE
WYE INV: 975.53
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I VALVE BOX
F&I 23.5 LF 12" SDR26 @ 1.0% TO STRD 11

STRD 11
F&I 6" X 12" SDR26 WYE
WYE INV: 975.77
SEE ROOF DRAIN DETAIL ON SHEET 16
F&I VALVE BOX

STCB5
REPLACE EXISTING CATCH BASIN, FRAME, AND GRATE SEEDEATILS
GRATE: 981.02
EXISTING 10" RCP INV: 975.04
EXISTING 12" PVC INV: 974.89
PROPOSED 12" SDR26 INV: 975.04
F&I 15 LF 12" SDR26 @ 1.0% TO STCO 1

NOTE: EXISTING UTILITY ELEVATIONS ARE FROM AS-BUILT PLANS. ALL CONNECTION ELEVATIONS MUST BE FIELD VERIFIED.

NORTH

0 20 40 60
SCALE 1"=20'

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LATEST REVISION:3-11-21
Prepared For:
ANDY BAARTMAN
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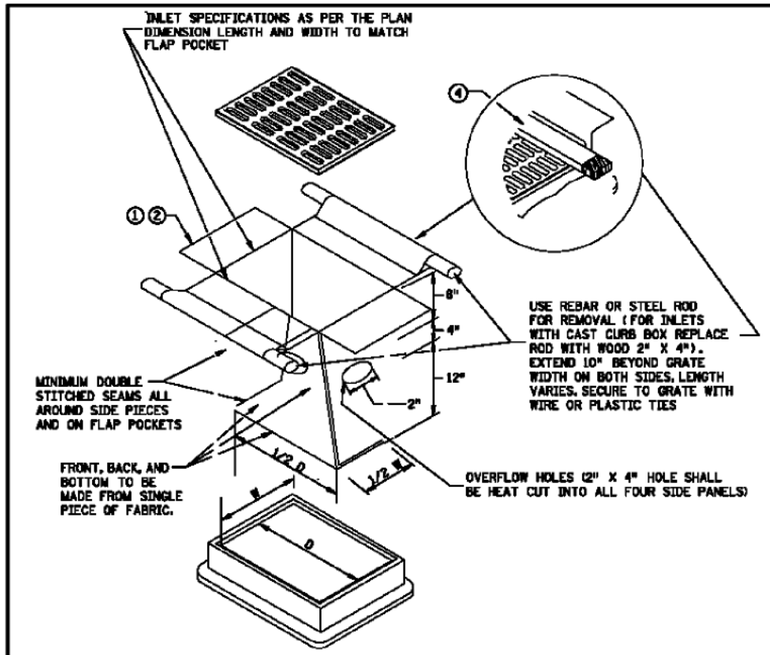
P.O.B. 31
RED WING, MN 55066
PHONE: 651-301-5103

ZUMBROTA APARTMENTS

ZUMBROTA, MN

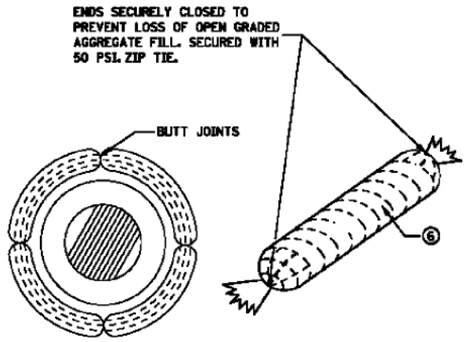
ROOF DRAIN PLAN

SHEET 9 OF 29 SHEETS

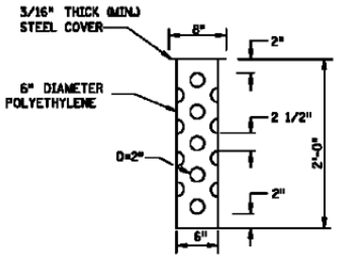


FILTER BAG INSERT ③

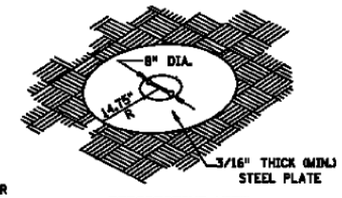
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



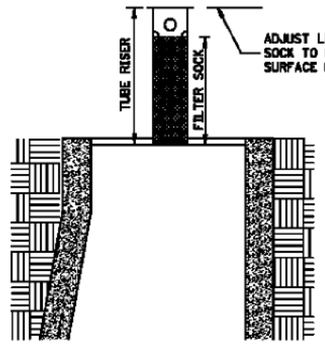
ROCK LOG/COMPOST LOG



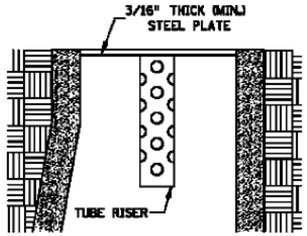
TUBE RISER



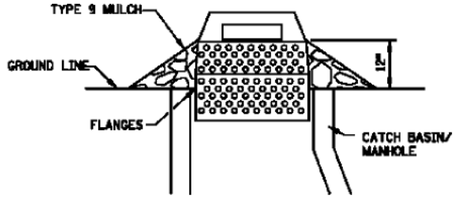
PERSPECTIVE VIEW



SECTION (UP POSITION)

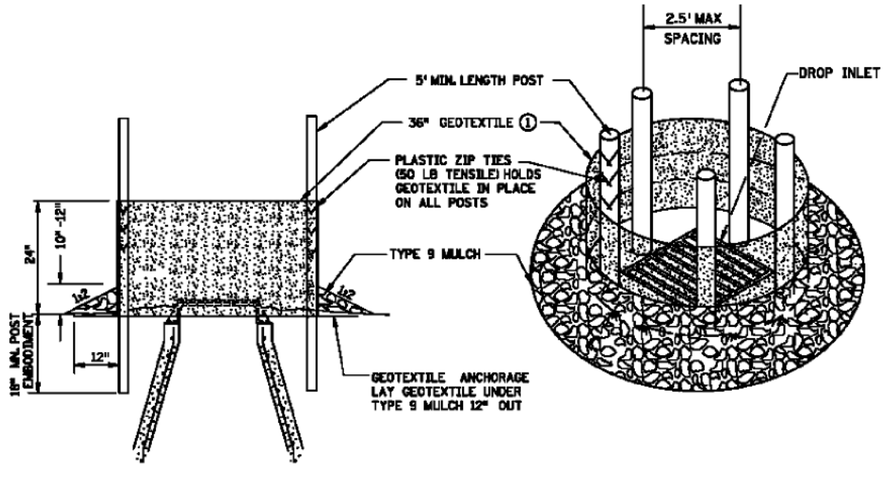


SECTION (DOWN POSITION)



SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

POP-UP HEAD

NOTES:
SEE SPECS. 2573, 3137, 3886 & 3891.

MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

③ INSTALLATION NOTES:
DO NOT INSTALL FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1: CA-3 GRADATION.

STANDARD SHEET NO.	TITLE:
5-297.405 (4 OF 4)	TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION
STANDARD APPROVED: MARCH 29, 2012	
STATE PROJ. NO.	(TH) SHEET NO. OF SHEETS

MARCH 29, 2012 5-297.405 (4 OF 4)

Engineering, Surveying & Planning
JOHNSON & SCOFIELD INC.
1203 Main Street Red Wing, MN 55066
ph. 651.388.1558 fax 651.388.1559

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CHECKED SPV

REVISED	BY	DATE
⚠ ADDENDUM #2	SPD	3/11/2021

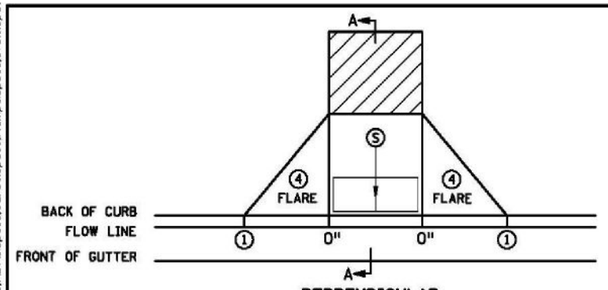
LATEST REVISION:3-11-21
Prepared For:
ANDY BAARTMAN
A-1 CLEANING
P.O.B. 31
RED WING, MN 55066
PHONE: 651-301-5103

ZUMBROTA APARTMENTS

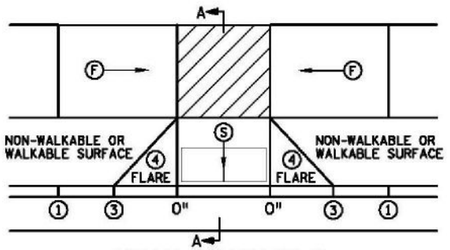
ZUMBROTA, MN

DETAILS

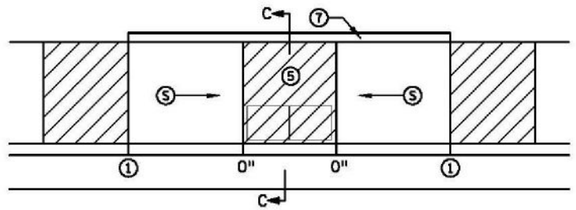
SHEET 10 OF 29 SHEETS



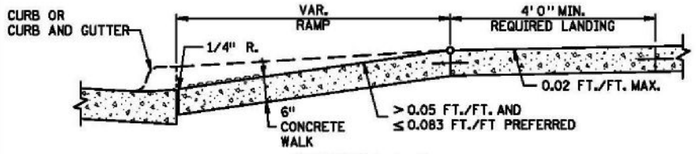
PERPENDICULAR



TIERED PERPENDICULAR

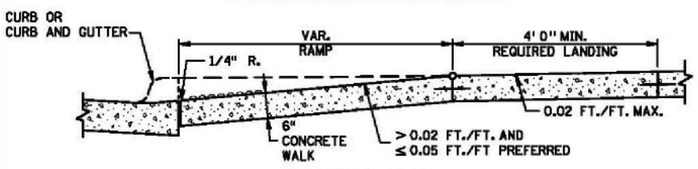


PARALLEL



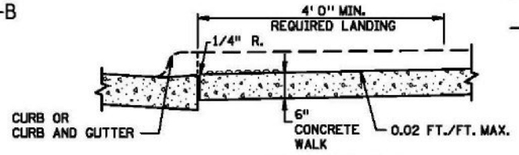
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



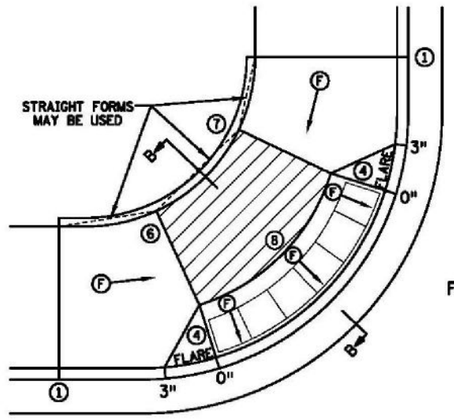
SECTION B-B

FAN

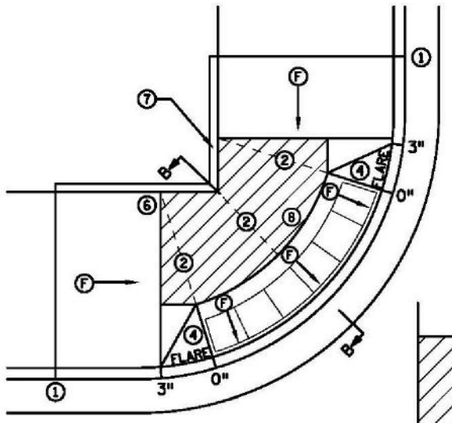


SECTION C-C

PARALLEL/DEPRESSED CORNER

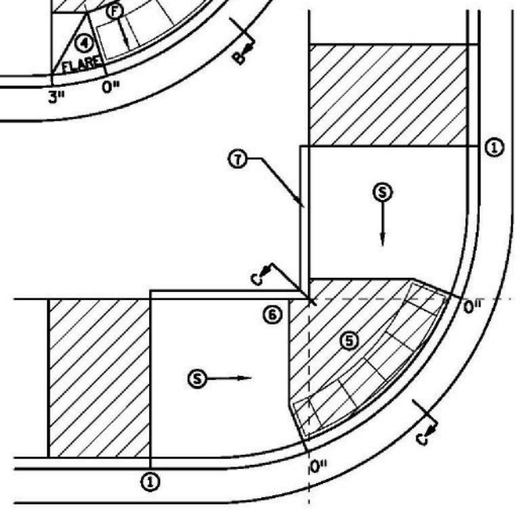


FAN⑩

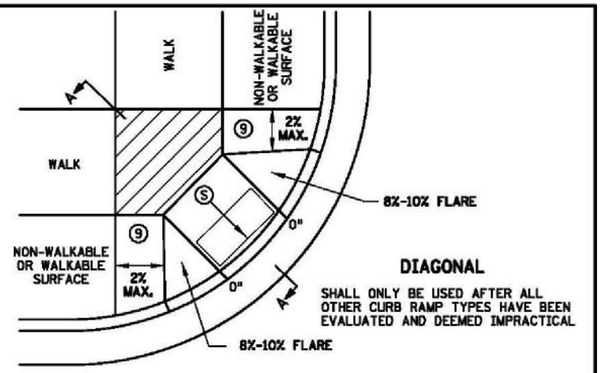


MODIFIED FAN⑩

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISIONS - PROSECUTION OF WORK (ADA).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER ENTIRE WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/TRAIL WIDTH. ARC LENGTH OF RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

① MATCH FULL HEIGHT CURB.
② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.
⑤ DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
⑥ THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
⑦ WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
⑧ A 7' MIN TOP RADIUS GRADE BREAK REQUIRED TO BE CONSTRUCTIBLE.
⑨ PAVE FULL WALK WIDTH.
⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:
APPROVED: 1-23-2017
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 1 OF 6

PLOTTED/REVISED:
DISTRICT *; DISTRICT *
USER NAME: $$@USER$NAME@$$
PATH & FILENAME: Documents/Operations/ADA_Review/ADA_DesignGuidelines/ADA_Standard&spaceDetails&space&spacePlates/2016&spaceADA&spaceStandard&spaceDetails&spaceRamp&spaceSlid&spac
FILE NAME: @FILENAME@

Engineering, Surveying & Planning
JOHNSON & SCOFIELD INC.
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Steven P. Voigt, PE
DATE 3-3-2021 REG. NO. 20034

DESIGNED SPD\SPV
DRAWN SPD
CHECKED SPV

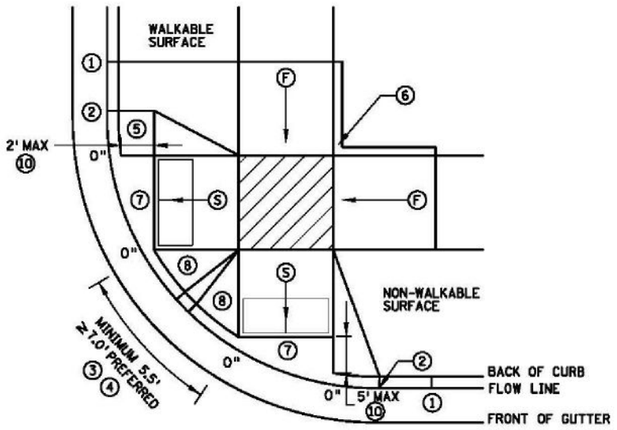
REVISED	BY	DATE
2 ADDENDUM #2	SPD	3/11/2021

LATEST REVISION: 3-11-21
Prepared For:
ANDY BAARTMAN
A-1 CLEANING
P.O.B. 31
RED WING, MN 55066
PHONE: 651-301-5103

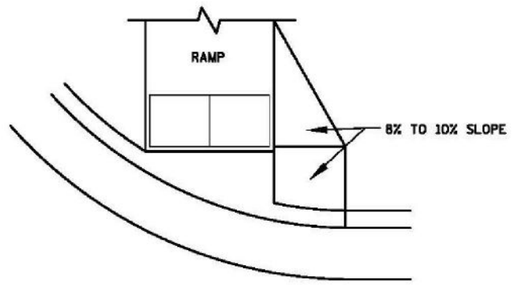
ZUMBROTA APARTMENTS
ZUMBROTA, MN

DETAILS

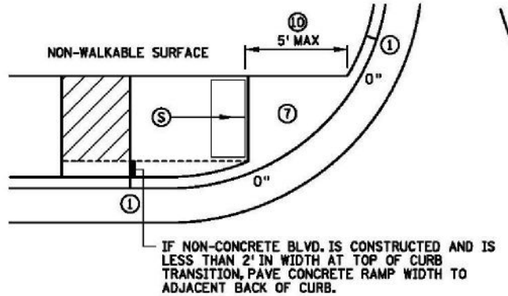
SHEET 11 OF 29 SHEETS



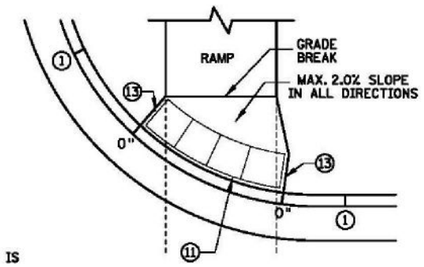
COMBINED DIRECTIONAL ⑨



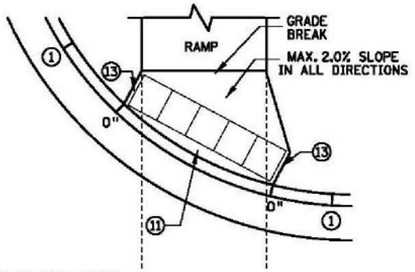
DIRECTIONAL RAMP WALKABLE FLARE

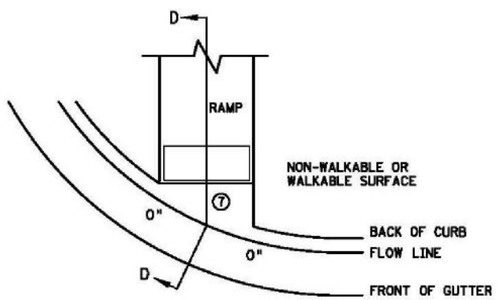


STANDARD ONE-WAY DIRECTIONAL ⑨

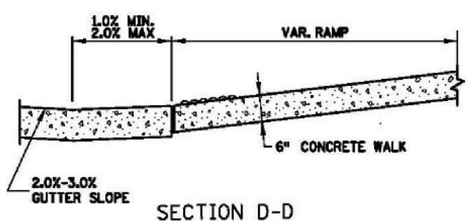


ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

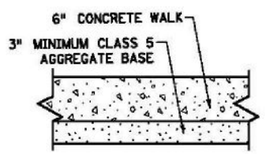




CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER ENTIRE WIDTH OF SHARED-USE PATH AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/PATH WIDTH. ARC LENGTH OF RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.
② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.
③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHOULD BE USED. SEE THE DETAIL ON THIS SHEET.
⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
⑧ 8% TO 10% WALKABLE FLARE.
⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

Ⓕ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:
APPROVED: 1-23-2017
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 2 OF 6

PLOTTED/REVISED:
DISTRICT *: DISTRICT *
USER NAME: $$$$USER$$NAME$$$$
PATH & FILENAME: Documents/Operations/ADA_Review/ADA_Design Guidelines/ADA&spaceStandard&spaceDetails&space&&spacePlates/2016&spaceStd&spaceCurb&spaceRamp&spaceStd.&sp
FILE NAME: @FILENAME@

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Prepared For:
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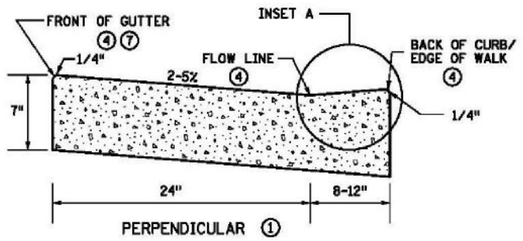
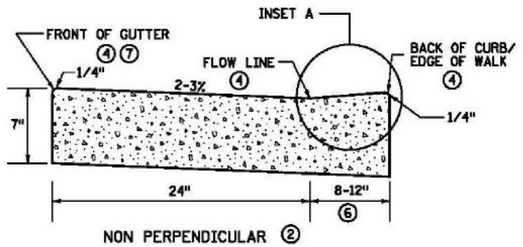
ZUMBROTA APARTMENTS
ZUMBROTA, MN

DETAILS

SHEET 12 OF 29 SHEETS

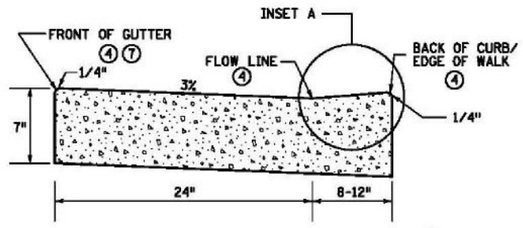


PERPENDICULAR ①

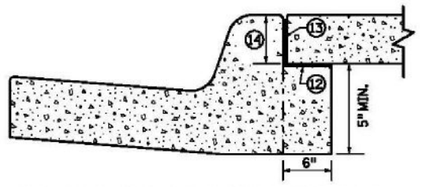


NON PERPENDICULAR ②

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

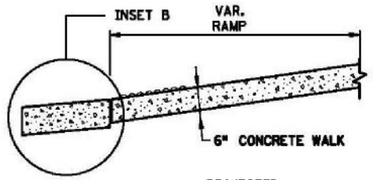


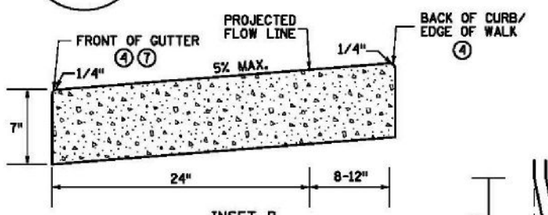
FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)



OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

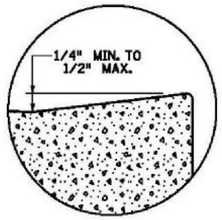
CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



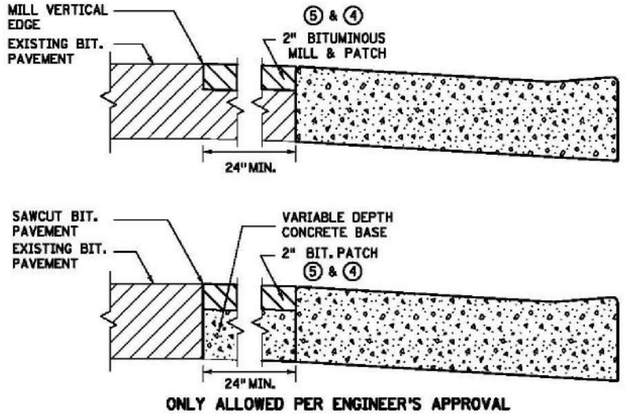


INSET B

OUTFLOW GUTTER ⑧



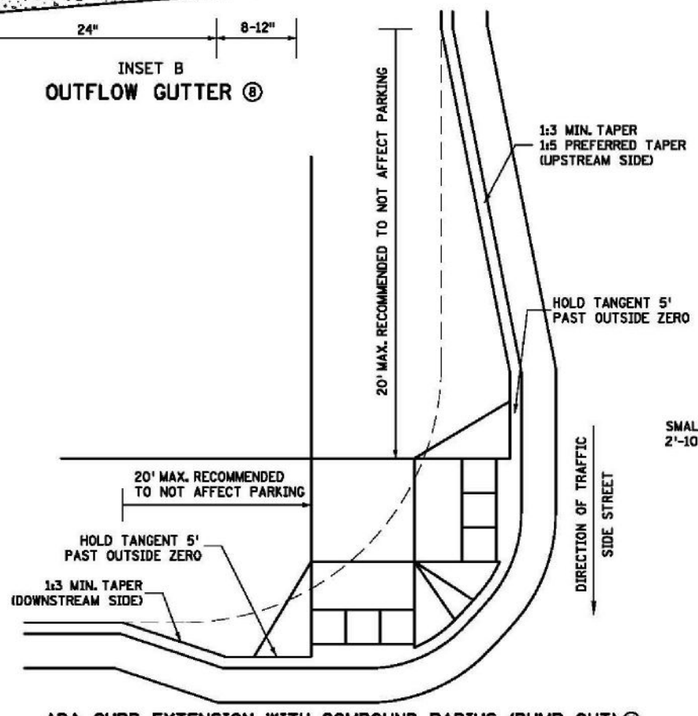
INSET A



ONLY ALLOWED PER ENGINEER'S APPROVAL

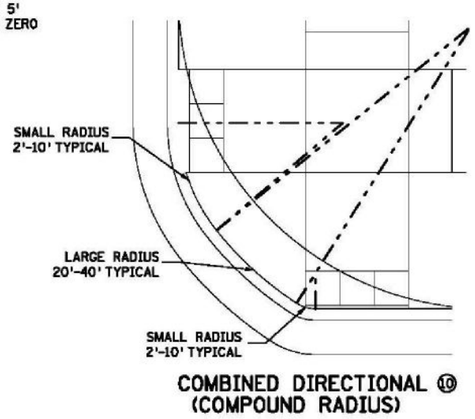
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪

DIRECTION OF TRAFFIC
MAIN STREET



COMBINED DIRECTIONAL ⑩ (COMPOUND RADIUS)

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.

③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.

④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.

⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.

⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.

⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.

⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.

⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

⑫ PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.

⑬ 1/2" PREFORMED JOINT FILLER PER MNDOT SPEC. 3702.

⑭ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:
APPROVED:
1-23-2017
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PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 3 OF 6

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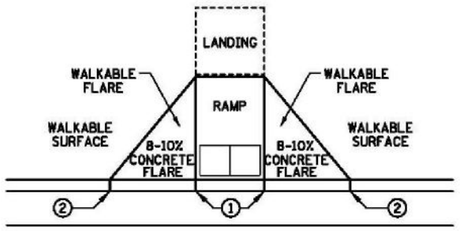
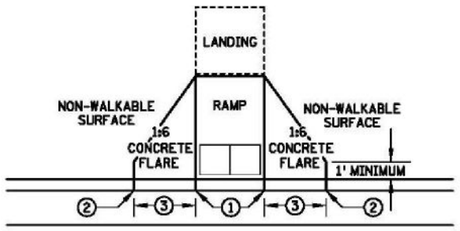
ZUMBROTA APARTMENTS
ZUMBROTA, MN

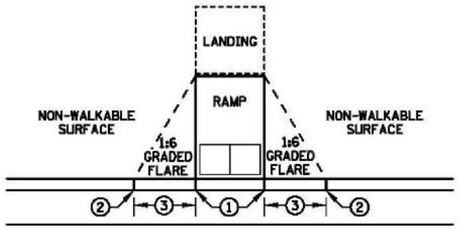
DETAILS
SHEET 13 OF 29 SHEETS



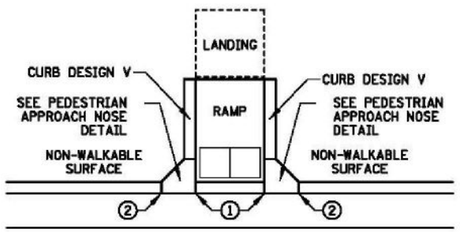
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

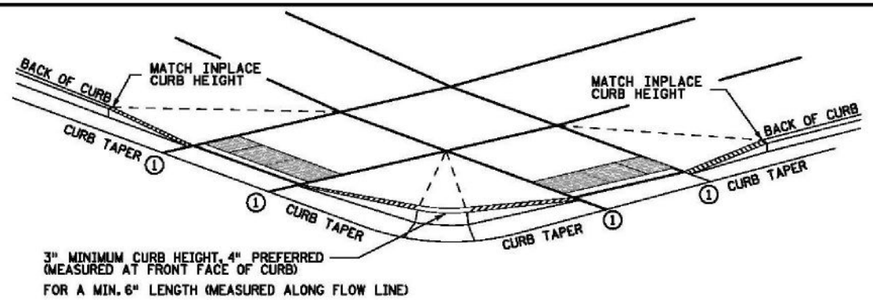


GRADED FLARES

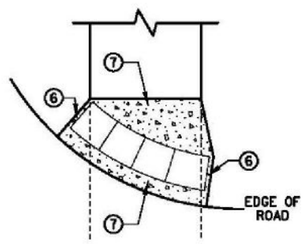


RETURNED CURB ⑤

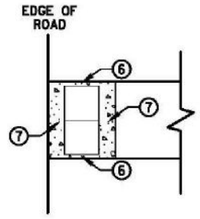
TYPICAL SIDE TREATMENT OPTIONS ④ ⑪



DETECTABLE EDGE WITH ⑧ CURB AND GUTTER

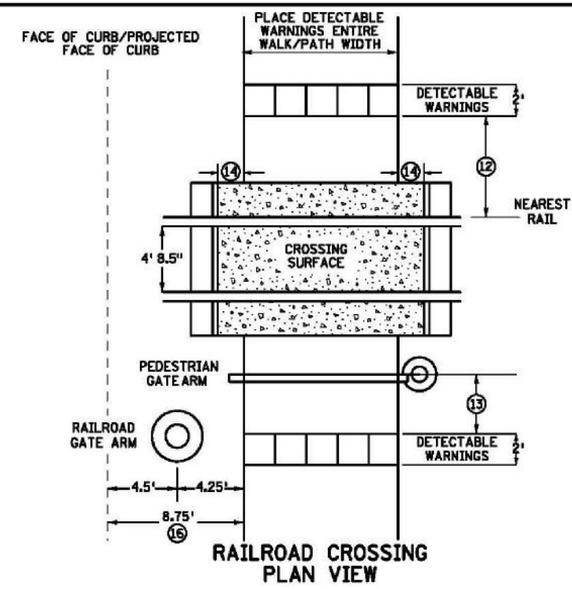


RADIAL DETECTABLE WARNING

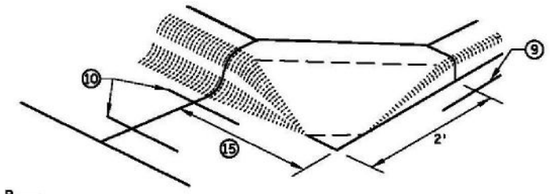


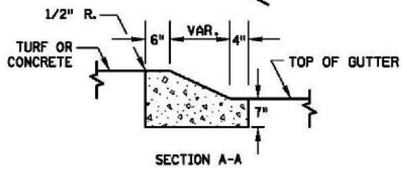
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

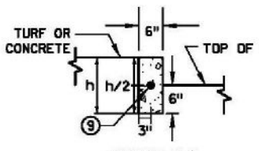


RAILROAD CROSSING PLAN VIEW

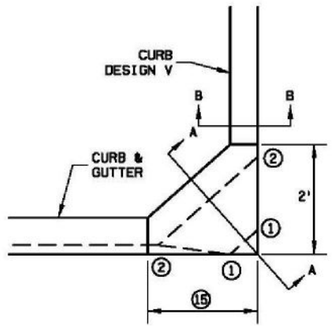




SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH NOSE DETAIL
(FOR RETURNED CURB SIDE TREATMENT)

NOTES:

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT.

② FULL CURB HEIGHT.

③ 2' FOR 4" HIGH CURB AND 3' FOR 6" HIGH CURB.

④ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

⑤ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑨ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑩ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑪ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE.

⑫ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑬ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑫.

⑭ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑮ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

⑯ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:
APPROVED: 1-23-2017
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 4 OF 6

PLOTTED/REVISED: @DATE&$TIME@$$
DISTRICT *: DISTRICT *
USER NAME: $$@USER$NAME@$$
PATH & FILENAME: Documents/Operations/ADA_Review/ADA_DesignGuidelines/ADA&spaces;Standard$spaces;Details$spaces;&spaces;Plates/2016$spaces;06$spaces;Curb&spaces;Ramp&spaces;Std.&spaces;Plate&spaces;5-297.250&spaces;Sheet&spaces;4.dgn
FILE NAME: @FILENAME@

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
Steven P. Voigt, PE
DATE 3-3-2021 REG. NO. 20034

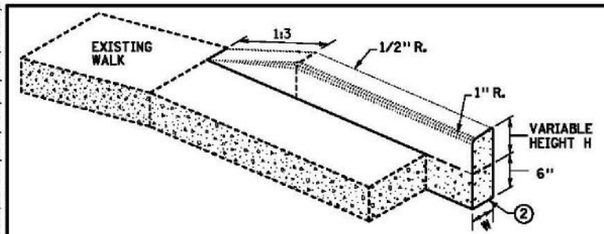
DESIGNED SPD\SPV
DRAWN SPD
CHECKED SPV

REVISED	BY	DATE
ADDENDUM #2	SPD	3/11/2021

LATEST REVISION: 3-11-21
Prepared For:
ANDY BAARTMAN
A-1 CLEANING
P.O.B. 31
RED WING, MN 55066
PHONE: 651-301-5103

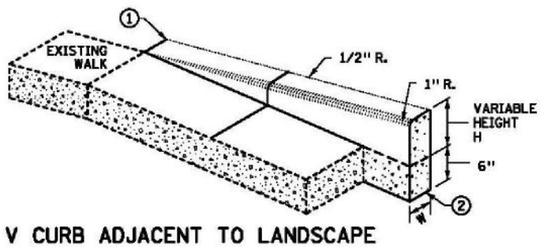
ZUMBROTA APARTMENTS
ZUMBROTA, MN

DETAILS
SHEET 14 OF 29 SHEETS



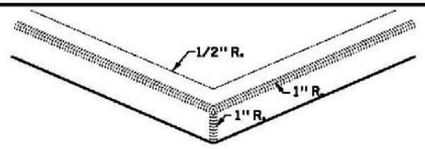
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS

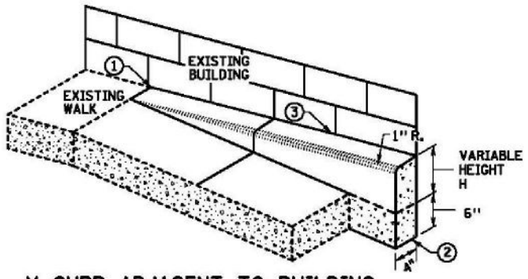


V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

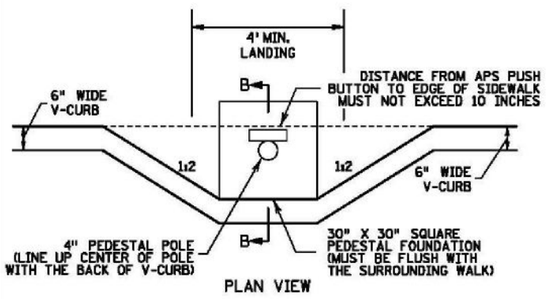


V CURB INTERSECTION

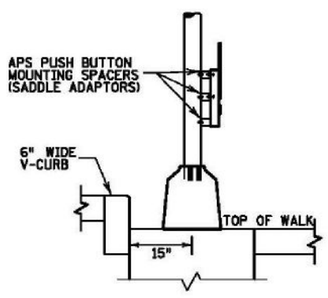


V CURB ADJACENT TO BUILDING OR BARRIER

CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
<6"	4"
≥6"	6"

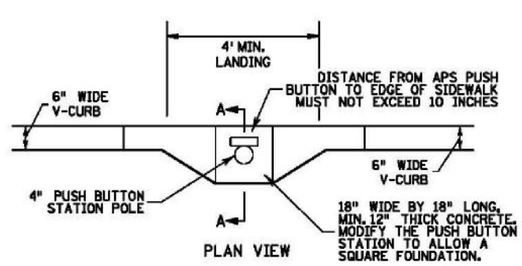


PLAN VIEW

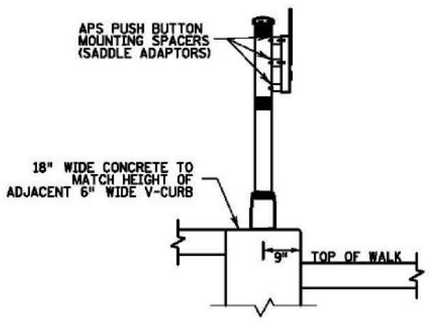


SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

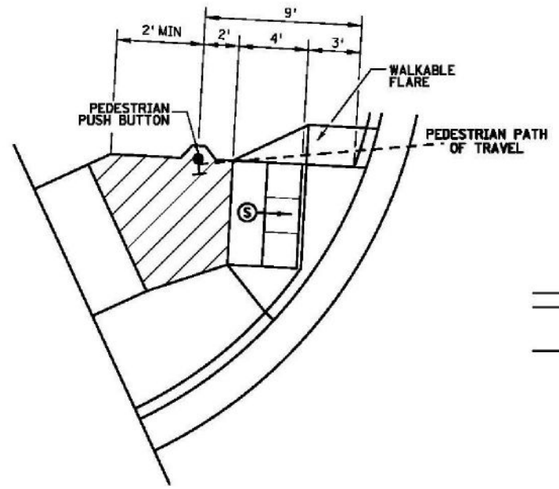


PLAN VIEW



SECTION A-A

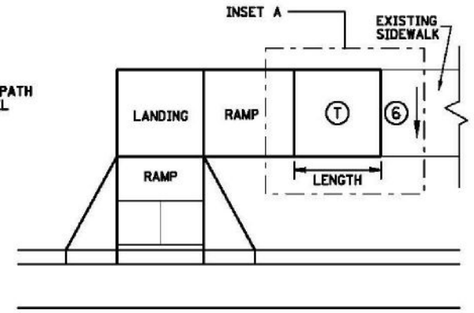
PUSH BUTTON STATION (V-CURB)

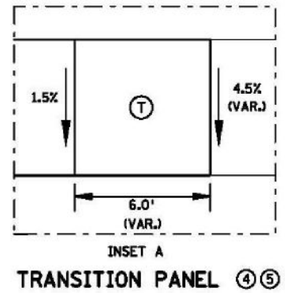


SEMI-DIRECTIONAL RAMP (3,4,9)

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)





TRANSITION PANEL ④⑤

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.

④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

Ⓣ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

REVISION:

APPROVED: 1-23-2017

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 5 OF 6

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Steven P. Voigt, PE

DATE 3-3-2021 REG. NO. 20034

DESIGNED SPD\SPV
DRAWN SPD
CHECKED SPV

REVISED	BY	DATE
⚠ ADDENDUM #2	SPD	3/11/2021

LATEST REVISION: 3-11-21

Prepared For:
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ZUMBROTA APARTMENTS

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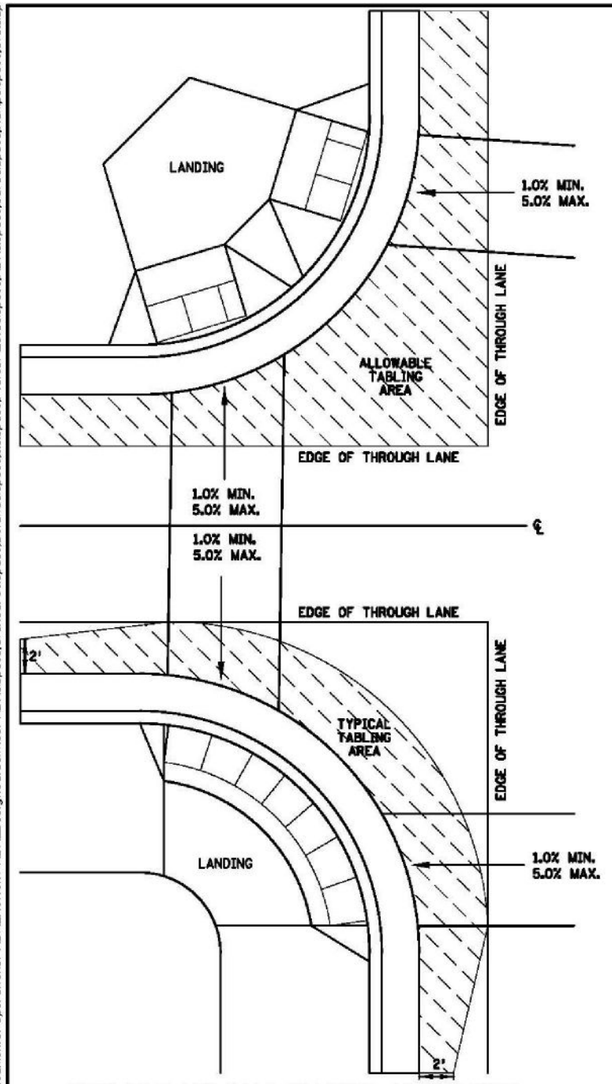
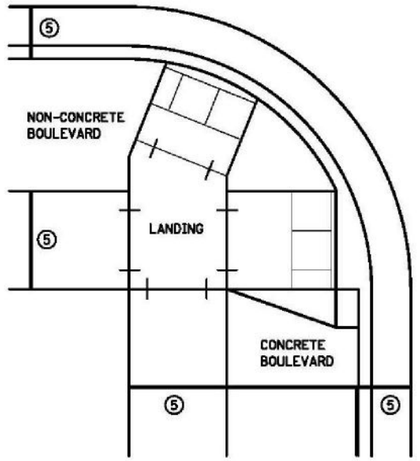
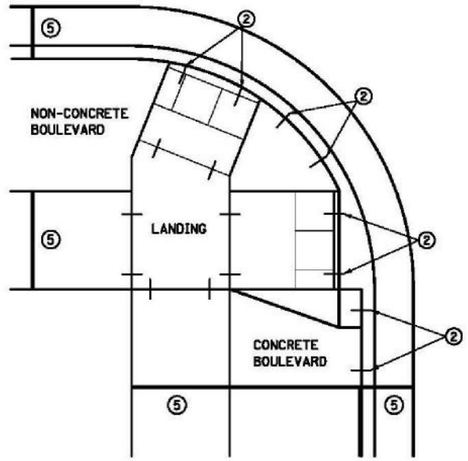
SHEET 15 OF 29 SHEETS



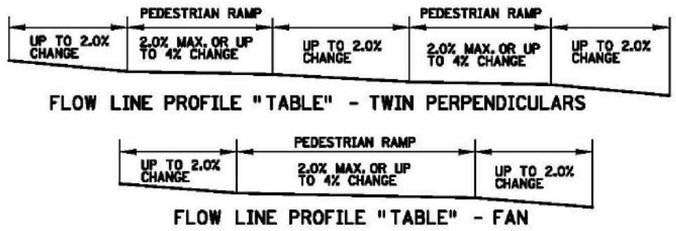
CURB LINE AND ROAD CROSSING ADJUSTMENTS



EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS



OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS ④

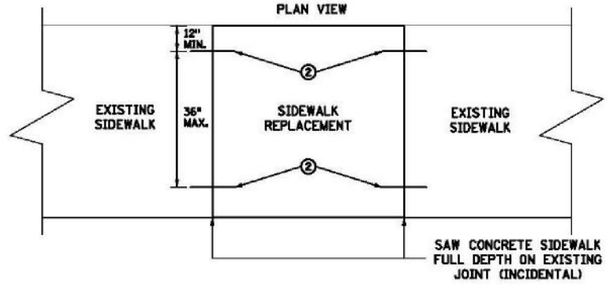


FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS

FLOW LINE PROFILE "TABLE" - FAN

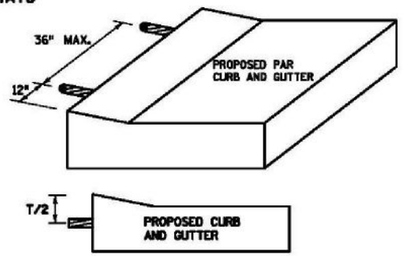
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

FLOW LINE PROFILE RAISE - FAN

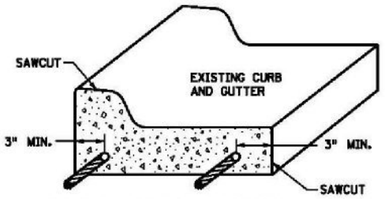


OPTIONAL SIDEWALK REINFORCEMENT

SIDEWALK REINFORCEMENT TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.

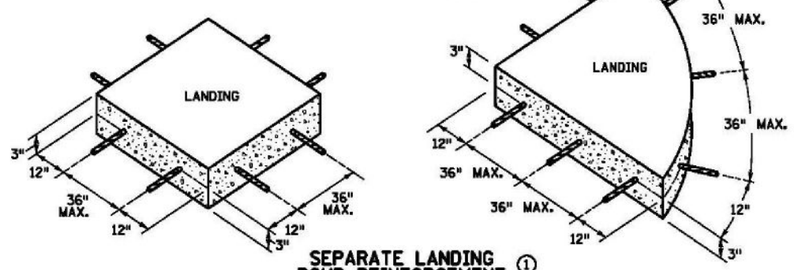


OPTIONAL CURB LINE REINFORCEMENT DETAILS ②④



FOR USE ON CURB RAMP RETROFITS

CURB AND GUTTER REINFORCEMENT ③



SEPARATE LANDING POUR REINFORCEMENT ①

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
3) 5.0% RECOMMENDED MAX. FLOW LINE
4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAXIMUM CENTER TO CENTER (EPOXY COATED). BARS TO BE ADJUSTED TO MATCH RAMP GRADE.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS WITHIN RADIUS.

④ THIS OPTIONAL CURB LINE REINFORCEMENT DETAIL SHOULD ONLY BE USED ON BITUMINOUS ROADWAYS WHEN SPECIFIED IN THE PLAN.

⑤ 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MNDOT SPEC. 3702.

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:
APPROVED: 1-23-2017
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PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 6 OF 6

PLOTTED/REVISED:
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FILE NAME: @FILENAME@

Engineering, Surveying & Planning
JOHNSON & SCOFIELD INC.
1203 Main Street Red Wing, MN 55066
ph. 651.388.1558 fax 651.388.1559

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Steven P. Voigt, PE
DATE 3-3-2021 REG. NO. 20034

DESIGNED SPD\SPV
DRAWN SPD
CHECKED SPV

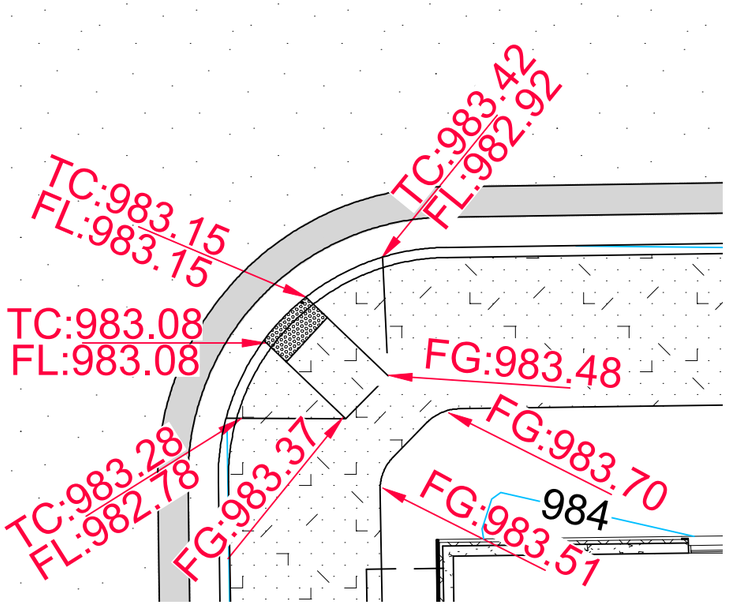
REVISED	BY	DATE
ADDENDUM #2	SPD	3/11/2021

LATEST REVISION: 3-11-21
Prepared For:
ANDY BAARTMAN
A-1 CLEANING
P.O.B. 31
RED WING, MN 55066
PHONE: 651-301-5103

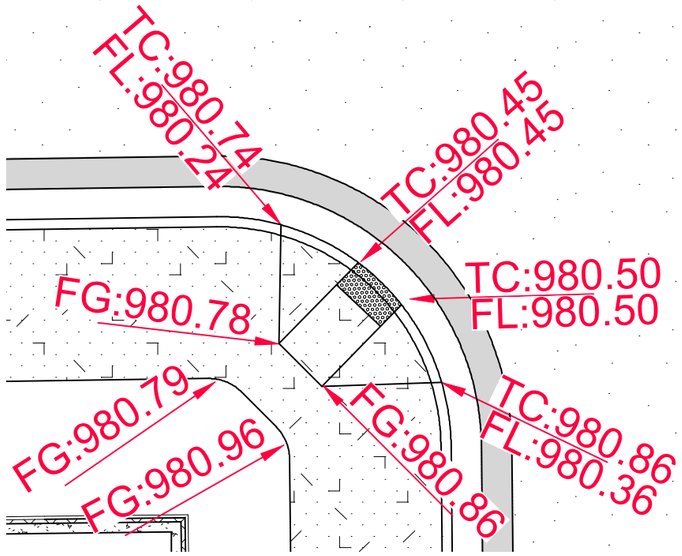
ZUMBROTA APARTMENTS
ZUMBROTA, MN

DETAILS

SHEET 16 OF 29 SHEETS



PEDESTRIAN CURB RAMP 1



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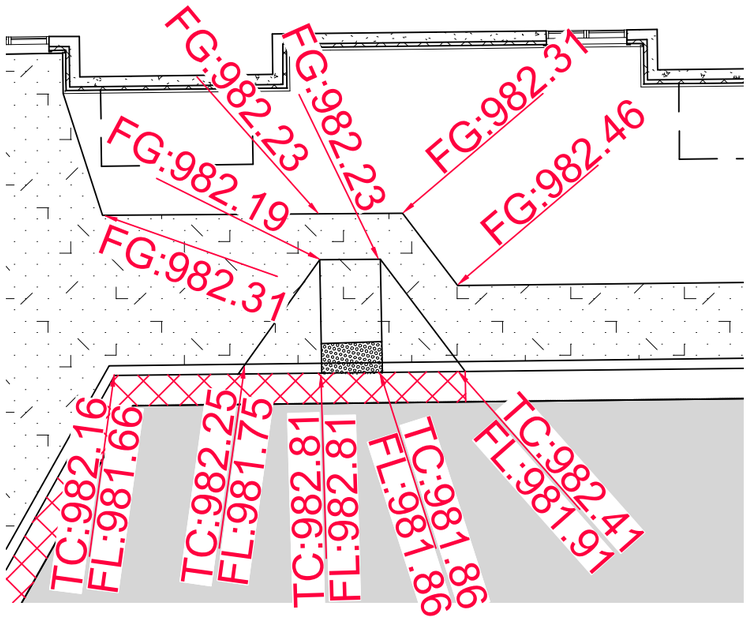

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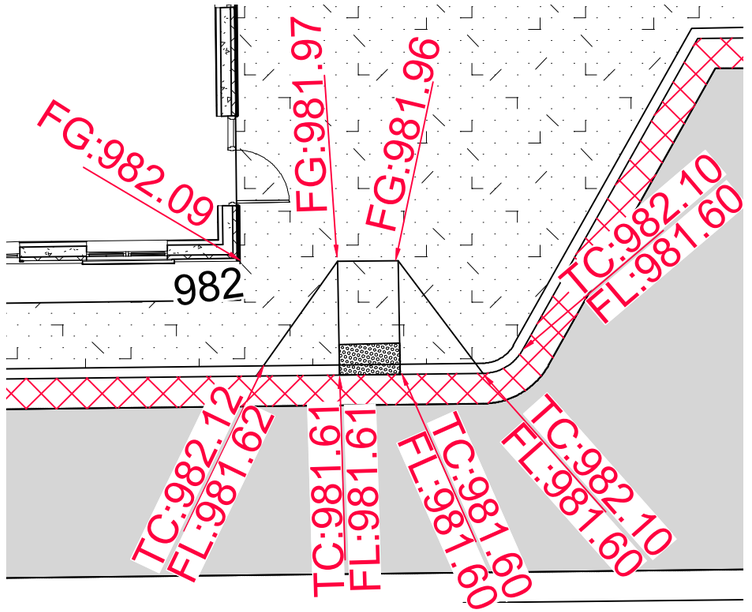

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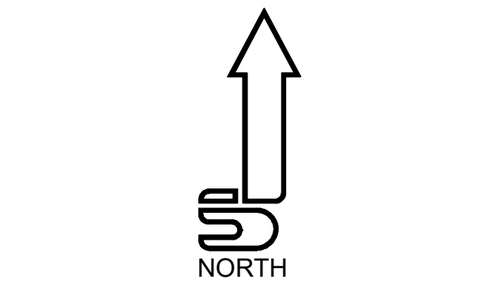

SCALE 1"=10'

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ZUMBROTA APARTMENTS

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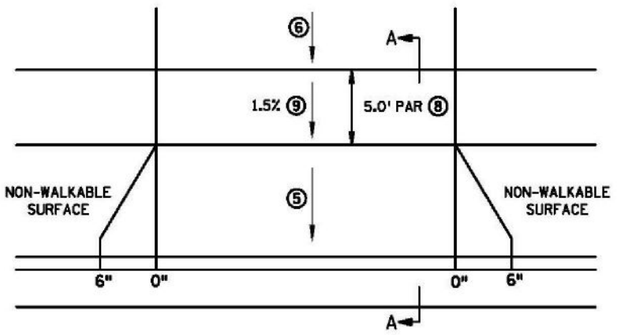
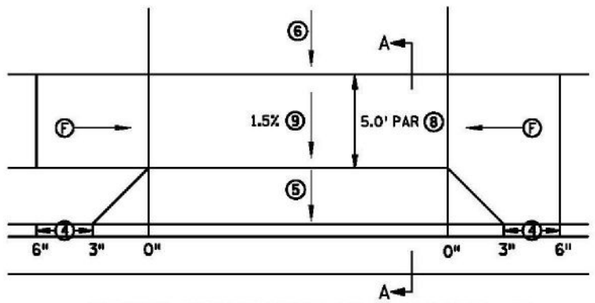
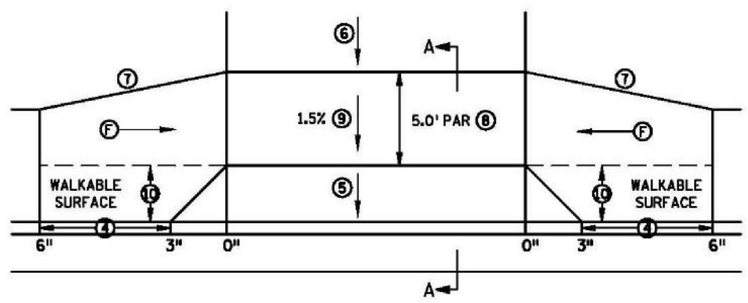
SHEET 17 OF 29 SHEETS



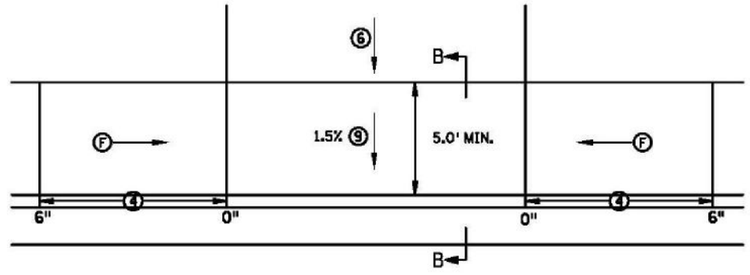
PERPENDICULAR DRIVEWAY ①



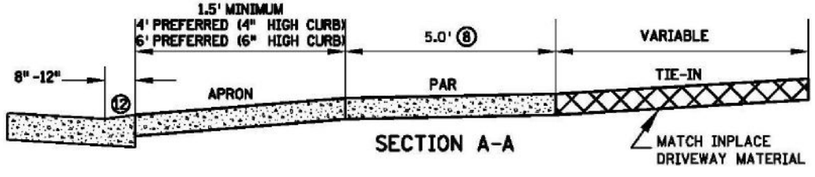
TIERED PERPENDICULAR DRIVEWAY ②



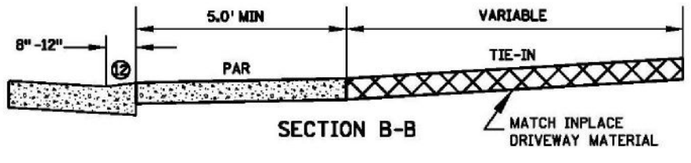
TIERED PERPENDICULAR OFFSET DRIVEWAY



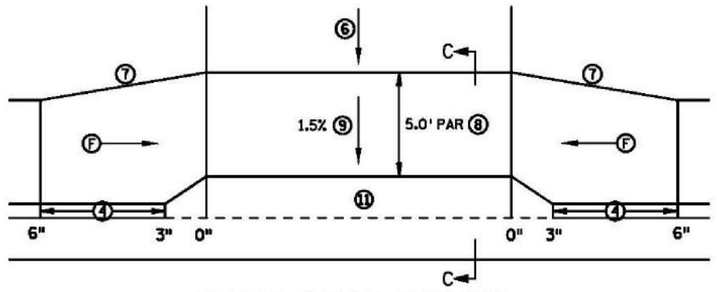
PARALLEL DRIVEWAY ③



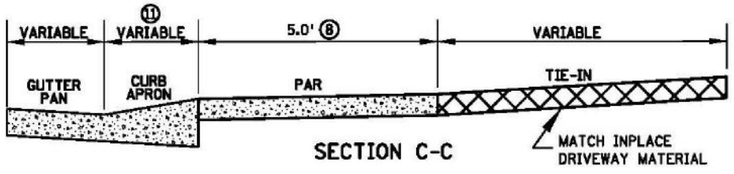
SECTION A-A



SECTION B-B



VALLEY GUTTER DRIVEWAY



SECTION C-C

NOTES:

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMPS FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

① TO BE USED WHEN THE DRIVEWAY PAR IS LEVEL WITH OR ABOVE THE TOP OF CURB, RESULTING IN A CONTINUOUS PAR PROFILE.

② TO BE USED WHEN THE DRIVEWAY PAR IS BELOW THE ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.

③ SHOULD BE USED FOR NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 CURB SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.

④ TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

⑤ 8% MAX. PREFERRED, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

⑥ 8% MAX. PREFERRED, SEE SHEET 2 FOR MORE INFORMATION.

⑦ 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.

⑧ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.

⑨ THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

⑩ SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.

⑪ VALLEY GUTTER APRON TO BE POURED INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.

⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.

LEGEND	
Ⓕ	INDICATES DRIVEWAY RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
X"	CURB HEIGHT (INCHES)

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:
APPROVED:
1-23-2017
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STANDARD PLAN 5-297.254 | 1 OF 4

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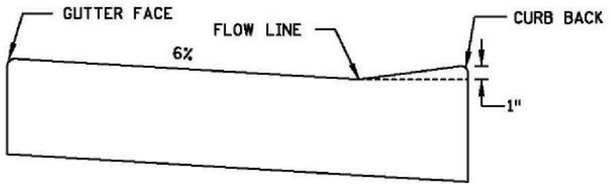
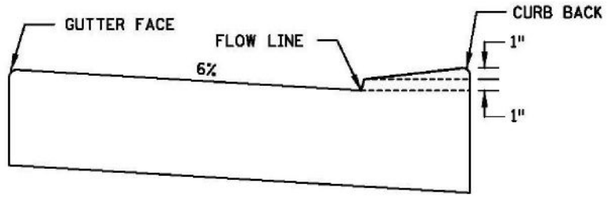
ZUMBROTA APARTMENTS
ZUMBROTA, MN

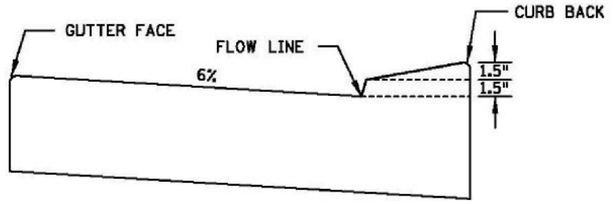
DETAILS
SHEET 18 OF 29 SHEETS



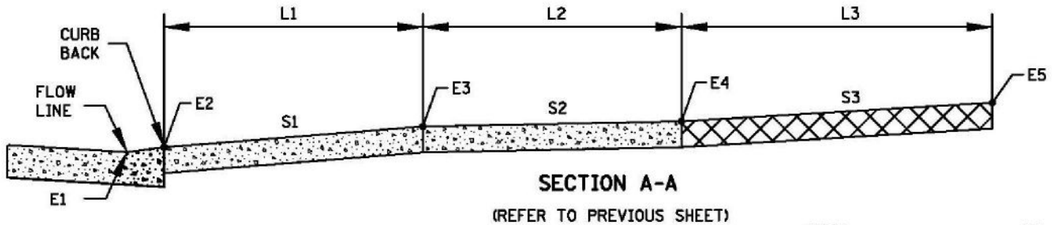
DW CURB STANDARD
STANDARD CURB AT DRIVEWAY



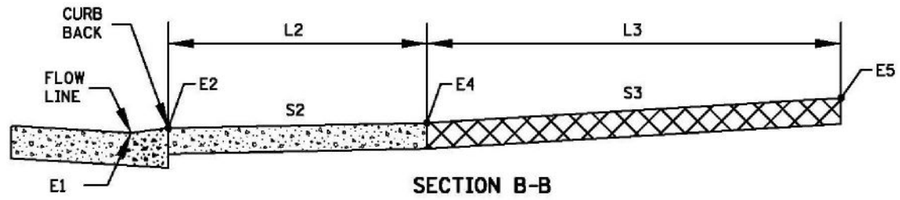
DW CURB TYPE 2
VERTICALLY CONSTRAINED



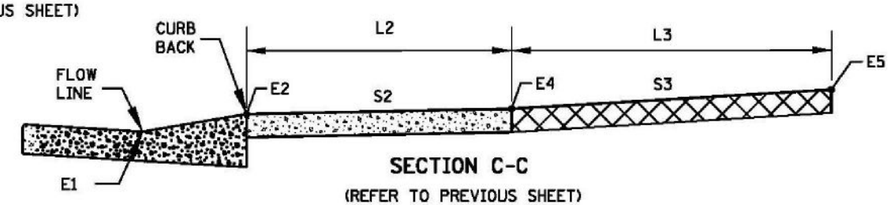
DW CURB TYPE 3
VERTICALLY CONSTRAINED



SECTION A-A
(REFER TO PREVIOUS SHEET)



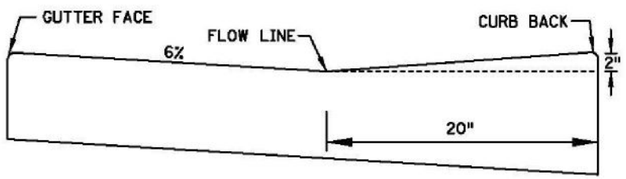
SECTION B-B
(REFER TO PREVIOUS SHEET)



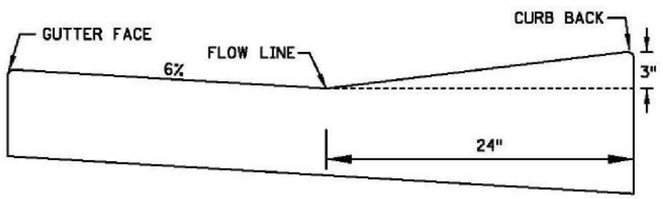
SECTION C-C
(REFER TO PREVIOUS SHEET)

DRIVEWAY TABULATION ①

STATION	SIDE	DRIVEWAY TYPE	CURB TYPE ③	E1	E2	L1 FT	S1 %	E3	L2 FT	S2 ② %	E4	L3 FT	S3 %	EXISTING %	E5	COMMENTS



VG 220



VG 324

VALLEY GUTTER CURB
OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED

NOTES:

DW CURB STANDARD SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB STANDARD SHOULD BE USED IF THERE IS ON STREET PARKING.

WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.

S1 8% MAX PREFERRED, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/ OR STEEPEN S3.

DW CURB TYPE 3 SHALL ONLY BE USED IN EXTREME TIE-IN CASES.

S3 8% MAX PREFERRED, IF THIS SLOPE IS EXCEEDED OR IS CONTINUED FOR MORE THAN 5' ANALYZE THE NEED FOR VERTICAL CURVE(S). SEE ROAD DESIGN MANUAL, CHAPTER 5, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

① EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY.

② SHOULD BE DESIGNED AT 1.5%.

③ DW CURB STANDARD SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPES 2 AND 3 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:
APPROVED: 1-23-2017
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DRIVEWAY AND SIDEWALK DETAILS

STANDARD PLAN 5-297.254 | 2 OF 4

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ZUMBROTA, MN

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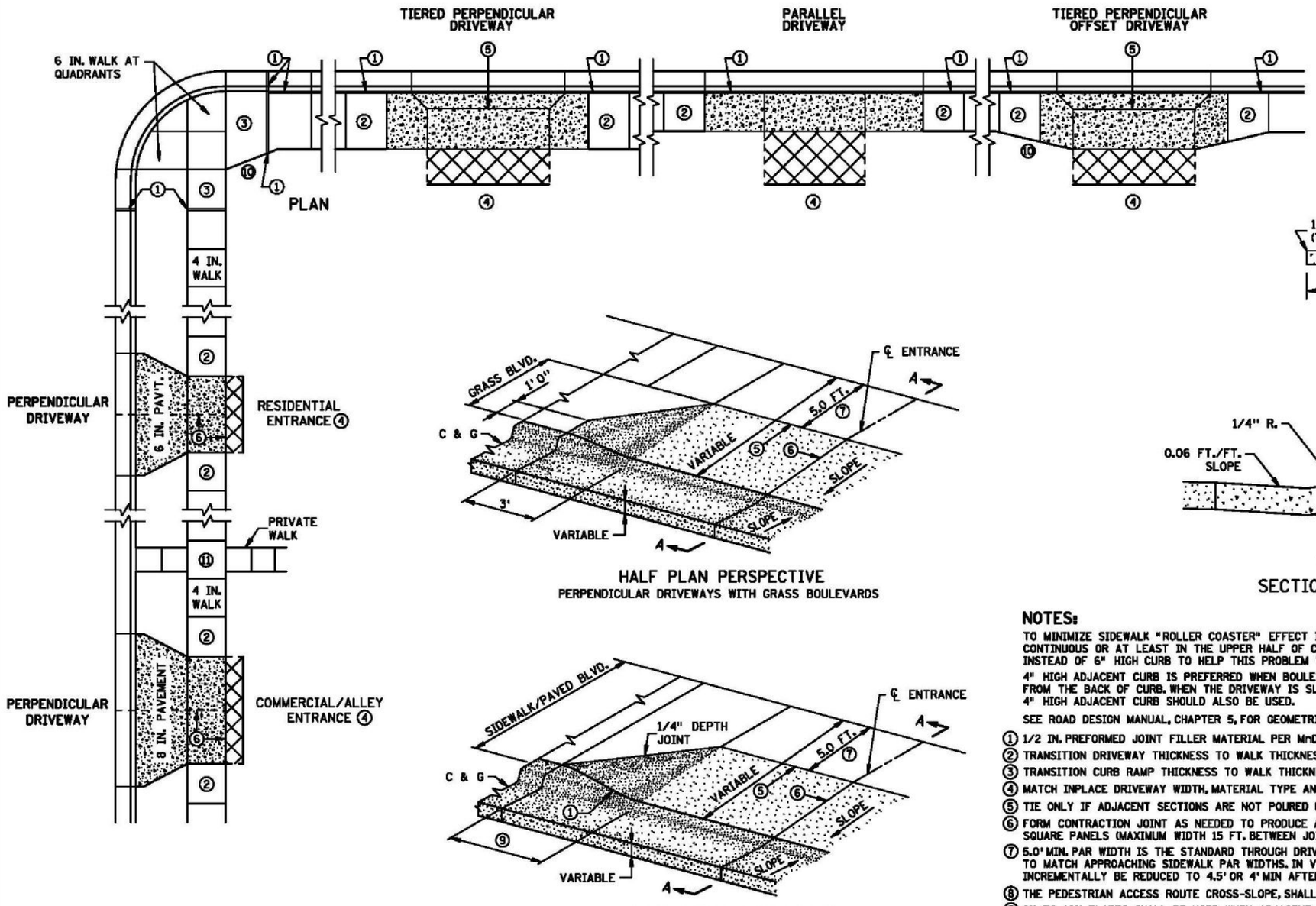
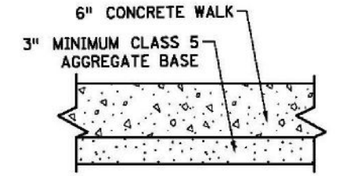
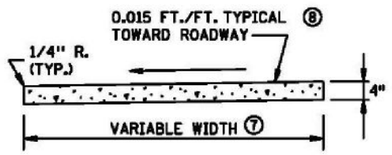


HALF PLAN PERSPECTIVE
PERPENDICULAR DRIVEWAYS WITH GRASS BOULEVARDS

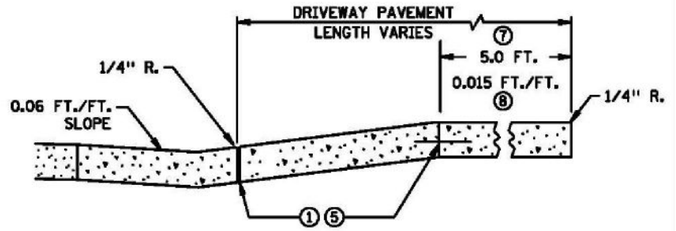
HALF PLAN PERSPECTIVE
PERPENDICULAR DRIVEWAYS WITH CONCRETE BOULEVARDS AND ALL TIERED DRIVEWAYS



SECTION THRU CURB RAMP



SECTION THRU WALK



SECTION A-A
SECTION THRU DRIVEWAY

NOTES:

TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.

4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.

SEE ROAD DESIGN MANUAL, CHAPTER 5, FOR GEOMETRIC DESIGN OF DRIVEWAYS.

① 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MnDOT SPEC. 3702, EXCEPT AT GRASS BOULEVARDS.
② TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS.
③ TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.
④ MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.
⑤ TIE ONLY IF ADJACENT SECTIONS ARE NOT POURED MONOLITHICALLY. SEE SECTION A-A.
⑥ FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS (MAXIMUM WIDTH 15 FT. BETWEEN JOINTS).
⑦ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.
⑧ THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
⑨ 8% TO 10% FLARES SHALL BE USED WHEN ADJACENT TO WALKABLE SURFACES AND FOR ALL TIERED DRIVEWAYS WITH GRASS BOULEVARDS.
⑩ 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.
⑪ LANDING REQUIRED. SEE NEXT SHEET FOR MORE INFORMATION.

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

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DRIVEWAY AND SIDEWALK DETAILS
STANDARD PLAN 5-297.254 | 3 OF 4

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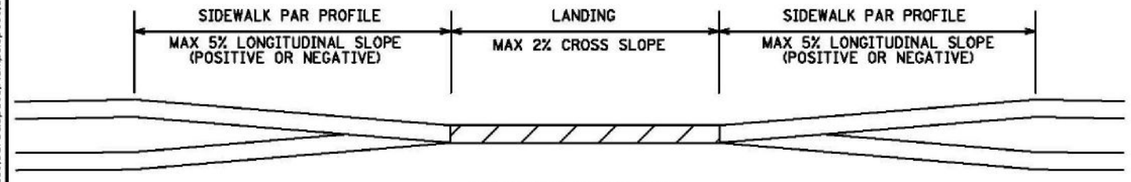
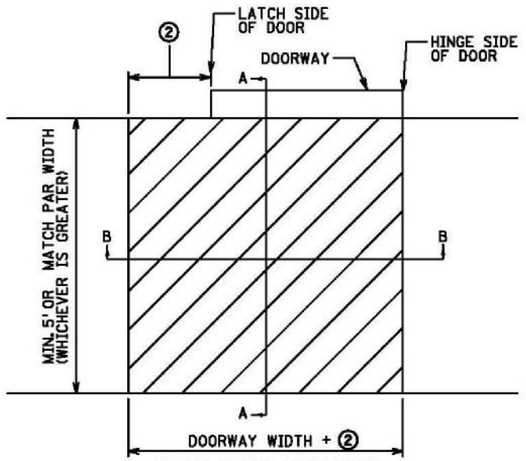
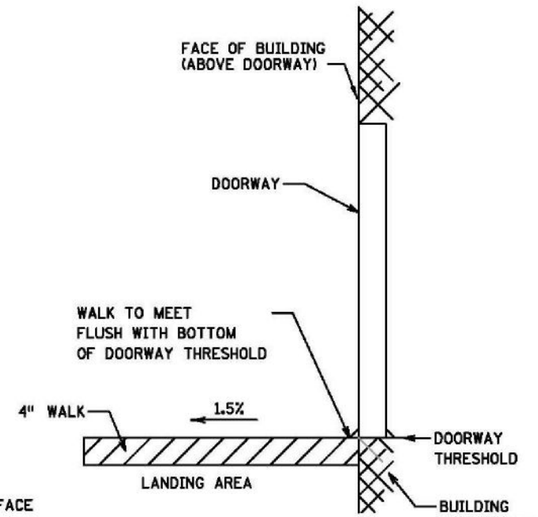


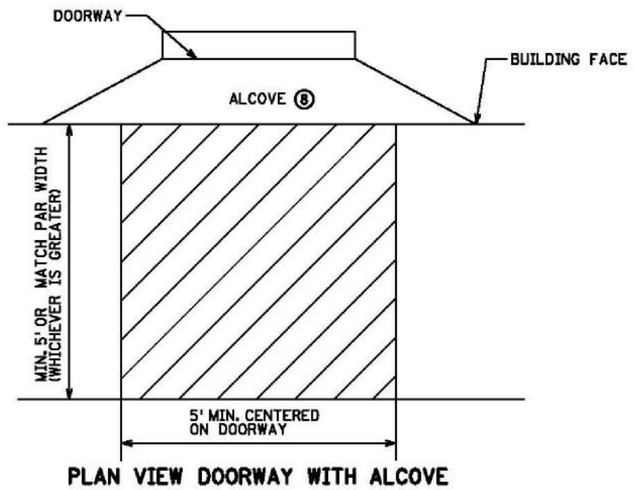
SECTION VIEW B-B



PLAN VIEW DOORWAY

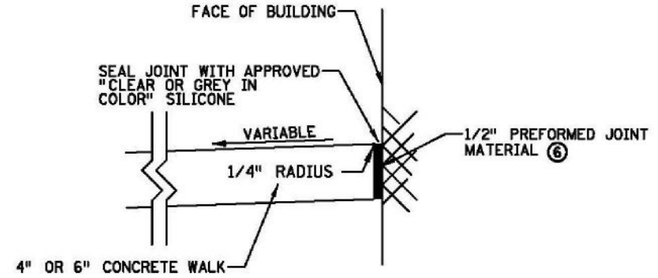


SECTION VIEW A-A

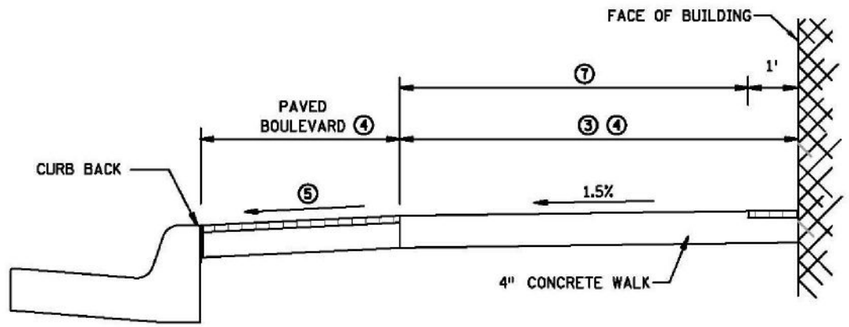


PLAN VIEW DOORWAY WITH ALCOVE

SIDEWALK LANDING REQUIREMENTS ①



BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION

NOTES:

FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.

SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.

SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.

① LANDING CRITERIA IS REQUIRED FOR ALL DOORS, PRIVATE WALKS AND STEPS.

② 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING.
12" MIN WHEN DOOR SWINGS INWARD FROM BUILDING.

③ 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.

④ 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE.

⑤ 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS. 10% MAX. FOR SHORT SECTIONS ALLOWED TO ACCOUNT FOR FIELD TOLERANCES.

⑥ FURNISH AND INSTALL BACKER ROD OF APPROPRIATE DIAMETER.

⑦ TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHOULD BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.

⑧ 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.

LEGEND	
	LANDING - ALL SLOPES TO BE LESS THAN 2%
	OPTIONAL AESTHETIC TREATMENT

PLOTTED/REVISED:

DISTRICT *: DISTRICT *
USER NAME: $$@USER$NAME@$$
PATH & FILENAME: Documents/Operations/ADA_Review/ADA_DesignGuidelines/ADA&spaceStandard&spaceDetails&spaces&spacesPlates/2016&spaceCurb&spaceRamp&spaceStd&sp

FILE NAME: @FILENAME@

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

REVISED:
APPROVED: 1-23-2017
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STANDARD PLAN 5-297.254 | 4 OF 4

Engineering, Surveying & Planning
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DATE 3-3-2021 REG. NO. 20034

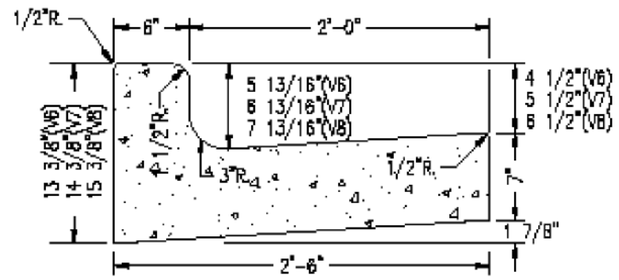
DESIGNED SPD\SPV
DRAWN SPD
CHECKED SPV

REVISED	BY	DATE
⚠ ADDENDUM #2	SPD	3/11/2021

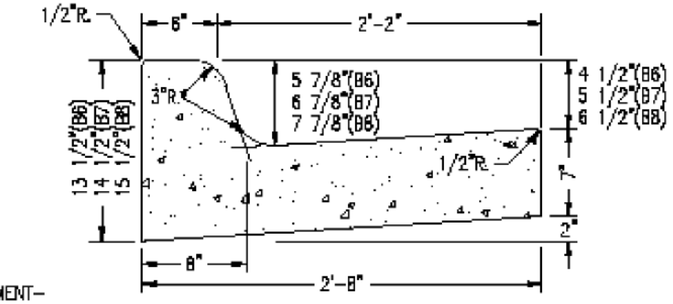
LATEST REVISION:3-11-21
Prepared For:
ANDY BAARTMAN
A-1 CLEANING
P.O.B. 31
RED WING, MN 55066
PHONE: 651-301-5103

ZUMBROTA APARTMENTS
ZUMBROTA, MN

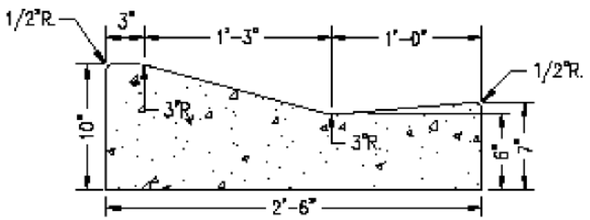
DETAILS
SHEET 21 OF 29 SHEETS



DESIGN "V"(VERTICAL)



DESIGN "B"(BATTERFACE)

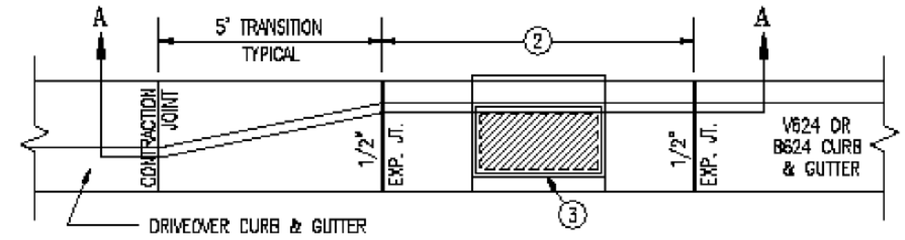


DESIGN "D"(DRIVEOVER)

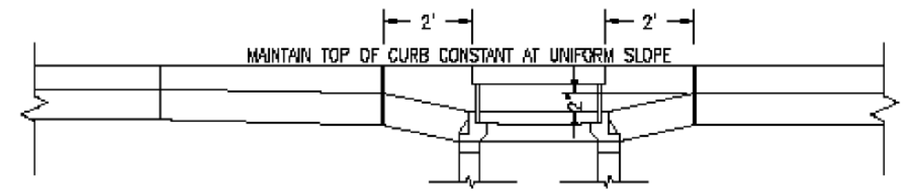
NOTES

1. CONCRETE MIX: MANUAL PLACEMENT–MN/DOT SPEC. 3F52, SLIP–FORM PLACEMENT–MN/DOT SPEC. 3F32.
2. PROVIDE 1/2" EXPANSION JOINT AT 300' MAXIMUM SPACING AND TO MATCH PAVEMENT EXPANSION JOINTS IN ADDITION TO EXPANSION JOINTS SHOWN ON OTHER DETAIL PLATES. PROVIDE 1/2" PERFORMED JOINT FILLER MATERIAL PER MN/DOT SPEC. 3702.
3. PROVIDE CONTRACTION JOINTS @ 9' MAXIMUM SPACING, SAW CUT 2" MINIMUM DEPTH. TOOLED IN JOINTS SHALL ALSO BE SAW CUT.
4. ALL CONCRETE CURB & GUTTER SHALL BE PLACED ON A MINIMUM OF A 4" AGGREGATE BASE.
5. SILL REQUIRED FOR DESIGN "V" AND "B", WHEREVER SIDEWALK ABUTS CURB. SEE S.D.P. 2–02.
6. RADII OF 25' OR LESS SHALL BE HAND FORMED.

wbks	CONCRETE CURB & GUTTER	REVISED: 12/31/19 SHEET: 1 OF 1 PLATE NO. 2–01



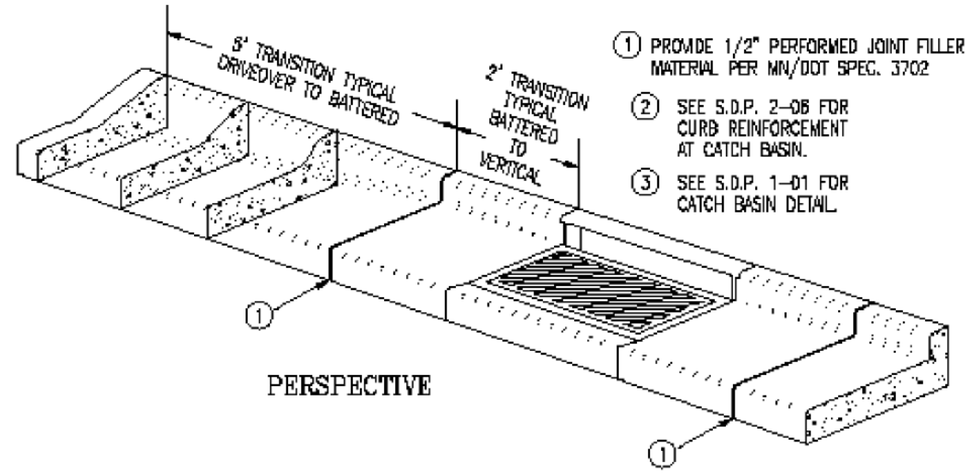
PLAN



SECTION A–A

NOTES

1. PROVIDE 1/2" PERFORMED JOINT FILLER MATERIAL PER MN/DOT SPEC. 3702
2. SEE S.D.P. 2–06 FOR CURB REINFORCEMENT AT CATCH BASIN.
3. SEE S.D.P. 1–01 FOR CATCH BASIN DETAIL.



PERSPECTIVE

wbks	TRANSITION CURB & GUTTER DRIVEOVER TO TYPE B OR V	REVISED: 12/31/19 SHEET: 1 OF 1 PLATE NO. 2–05

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Prepared For:
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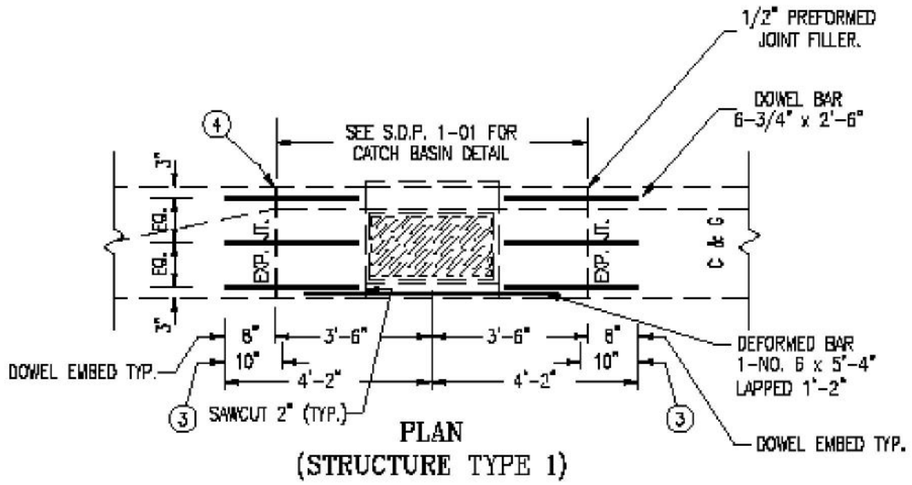
A–1 CLEANING
P.O.B. 31
RED WING, MN 55066
PHONE: 651–301–5103

ZUMBROTA APARTMENTS
ZUMBROTA, MN

DETAILS



PLAN
(STRUCTURE TYPE 1)

NOTES

1. DOWEL BARS SHALL BE PER MN/DOT SPEC. 3302 (EPOXY COATED).
2. DEFORMED BAR SHALL BE PER MN/DOT SPEC. 3301 (EPOXY COATED).

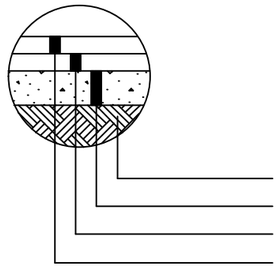
(3) COAT THE DOWEL BARS WITH A THIN UNIFORM COATING OF AN APPROVED FORM COATING MATERIAL MEETING MN/DOT SPEC. 3002 NOT MORE THAN THAN ONE HOUR BEFORE COVERING WITH CONCRETE, OR WRAP WITH TEFLON TAPE.

(4) PROVIDE 1/2" PERFORMED JOINT FILLER MATERIAL PER MN/DOT SPEC. 3702.

whks

CURB & GUTTER REINFORCEMENT AT CATCH BASINS

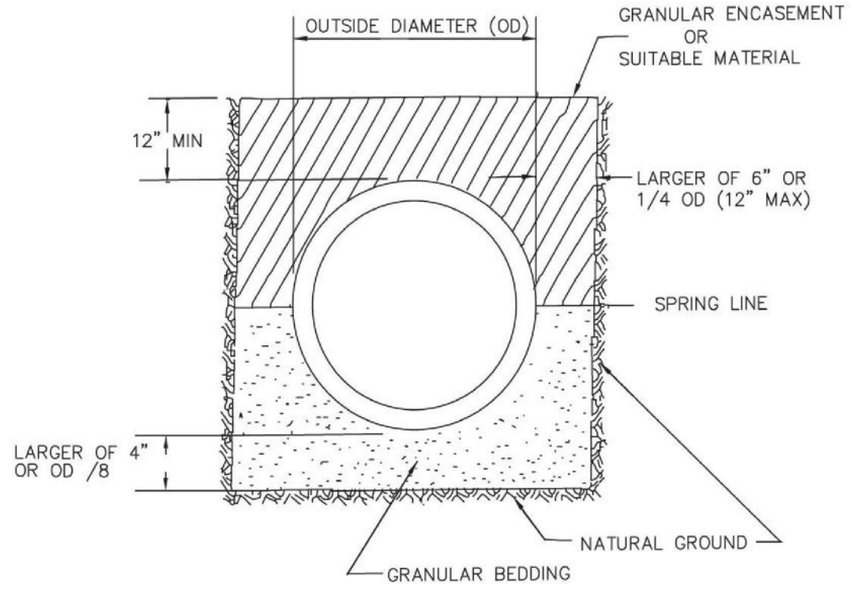
REVISED: 12/31/19
SHEET: 1 OF 1
PLATE NO. 2-06



COMPACTED SUBGRADE
CONST. 6" CL 5 AGG. BASE
CONST. 1 1/2" BIT. BASE COURSE – SPNWB330B (MNDOT SPEC. 2360.501)
CONST. 1 1/2" BIT. WEAR COURSE – SPWEB340B (MNDOT SPEC. 2360.501)

NOT TO SCALE

BITUMINOUS SECTION



NOT TO SCALE

PIPE BEDDING

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ZUMBROTA APARTMENTS
ZUMBROTA, MN

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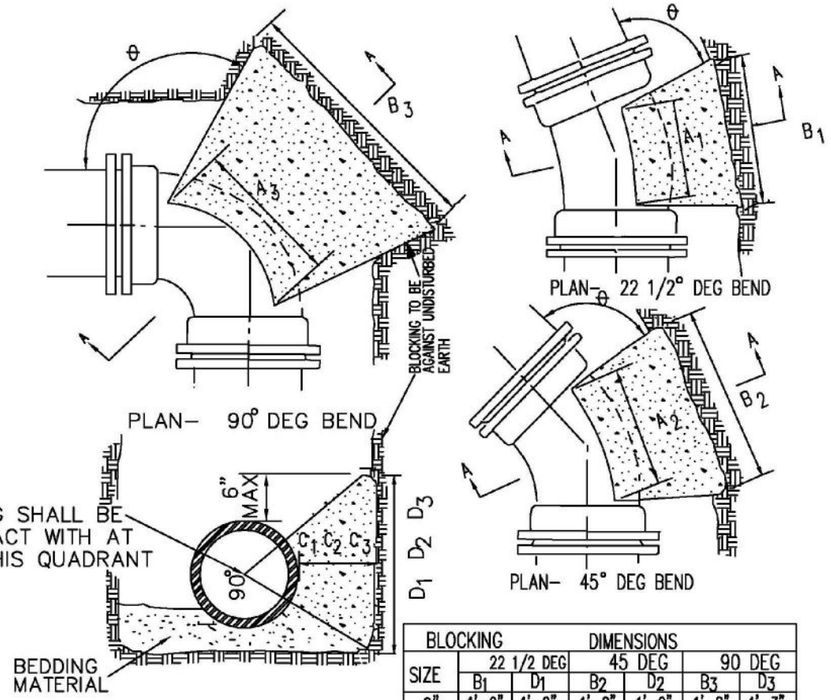


BLOCKING SIZE	DIMENSIONS 22 1/2 DEG B1	22 1/2 DEG D1	45 DEG B2	45 DEG D2	90 DEG B3	90 DEG D3
6"	1'-0"	1'-0"	1'-0"	1'-0"	1'-8"	1'-3"
8"	1'-0"	1'-0"	1'-6"	1'-4"	2'-0"	1'-6"
12"	1'-6"	1'-4"	2'-0"	2'-0"	3'-0"	2'-8"
16"	2'-0"	1'-8"	3'-0"	2'-6"	4'-0"	3'-10"

NOTES:
1. DIMENSIONS IN TABLE ARE BASED ON A WATER PRESSURE OF 150 PSI AND AN EARTH RESISTANCE OF TWO TONS PER SQ. FT.

2. DIMENSION C1, C2, C3, SHOULD BE LARGE ENOUGH TO MAKE ANGLE O EQUAL TO OR LARGER THAN 45 DEG.

3. DIMENSION A1, A2, A3 SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH MECHANICAL JOINT BOLTS.

4. SHAPE OF BACK OF CONCRETE BLOCKING MAY VARY AS LONG AS POUR IS AGAINST FIRM UNDISTURBED EARTH.

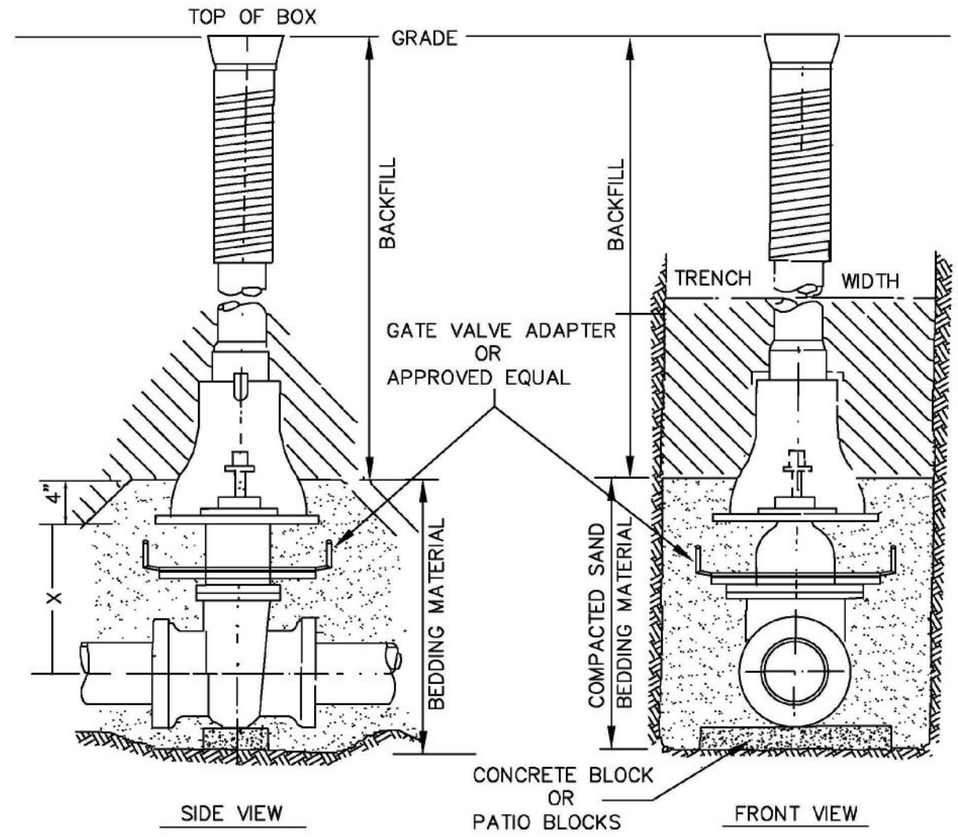
5. 5 BAG MIX CONCRETE TO BE USED FOR BLOCKING.

6. FOR LOSSE SANDY SOILS INCREASE ALL DIMENSIONS TO 6 INCHES.

7. PLACE 6MIL POLYETHYLENE FILM AROUND ALL BOLTS, NUTS, AND JOINTS.
NOTE: REACTION BACKING USING CONCRETE, WOOD, RETAINER GLANDS, ROD TIES, ETC SHALL BE INCLUDED AS A PART OF INSTALLING THE WATERMAIN. NO SEPARATE COMPENSATION SHALL BE MADE.

NOT TO SCALE

THRUST BLOCKS



PIPE DIA. INCHES	X=SETTING INCHES
2	6
3	7
4	8
6	12
8	13
12	21
16	30

NOT TO SCALE

VALVE BOX

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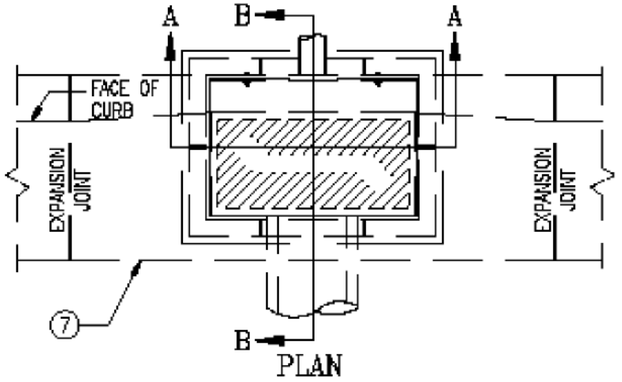
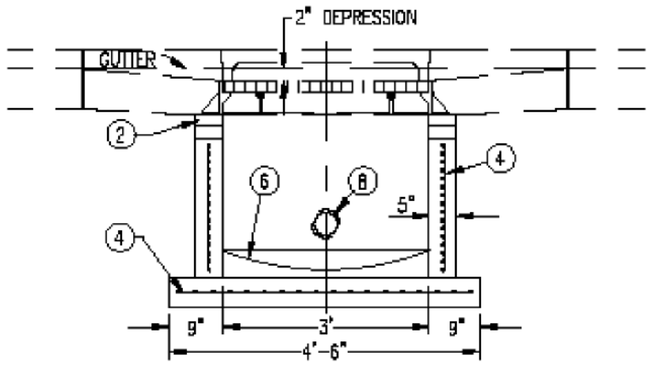
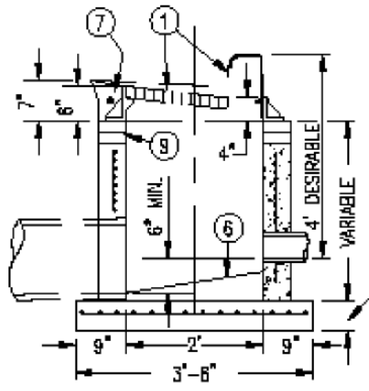


PLAN



SECTION A–A



8" W/#13 @ 12" E.W. (CAST IN PLACE)
5" MIN. (PRECAST)

SECTION B–B

NOTES

1. REFER TO PLANS AND S.D.P. 1-11 FOR TYPE OF FRAME, GRATE AND CURB BOX.
2. ADJ. RINGS SHALL BE PER S.D.P. 1-12, AND BE FULLY MORTARED. HEIGHT OF RINGS SHALL BE 2" MIN.-10" MAX. WITH 3 RINGS MAXIMUM.
3. STRUCTURE SHALL BE PRECAST CONCRETE.
4. REINFORCING SHALL BE A MINIMUM OF SINGLE LINE STEEL WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.12 SQ. IN. PER FOOT EACH DIRECTION.
5. NO STEPS REQUIRED.
6. PROVIDE CONCRETE FILLETS TO FIT BOTTOM PORTION OF STRUCTURE AND TO DIRECT THE FLOW TO OUTLET AT MIN. SLOPE OF 1/4" PER FOOT. MINIMUM CONCRETE THICKNESS AT OUTLET 1 1/2".
7. SEE S.D.P. 2-01, 2-05 AND 2-06 FOR CURB, GUTTER AND REINFORCEMENT DETAILS AT CATCH BASINS.
8. 4" SUBDRAIN, IF SHOWN ON PLANS
9. USE PROTECTIVE COATING FROM CASTING TO 12" BELOW BOTTOM OF ADJUSTING RINGS. COATING SHALL CONFORM TO ASTM D -412. FINAL LINER MATERIAL SHALL BE NO LESS THAN 170 MILS THICK (BRUSHED) OR 80 MILS THICK (SPRAYED)

CASTINGS – STRUCTURE TYPE 1			
TYPE	DESCRIPTION	MEENAH REF. NO.	GRATE SLOTS	REMARKS
B	3' CURB INLET FRAME, GRATE & BOX	R-3067	DIAGONAL	USE WHERE DRIVEWAY PRECLUDES USE OF TYPE B IN BATTERFACE CURB
C	3' DRIVEWAY INLET FRAME & GRATE	R-3290-A	PARALLEL (BICYCLE SAFE)	
V	3' CURB INLET FRAME, GRATE & BOX	R-3067	PERPENDICULAR VANE	USE WHEN STREET GRADE EXCEEDS 2%

CASTINGS – OTHER STRUCTURES				
	TYPE	DESCRIPTION	MEENAH REF. NO.	COVER/GRATE	REMARKS
COVER	1	9" FRAME & COVER-T GASKETED	R-1916-C	SELF-SEALING, BOLTED LID	USED IN FLOOD PRONE AREAS & IN CONCRETE PAVING
	2	9" FRAME & COVER-T GASKETED	R-1733-B	INDENTED TOP	
	3	7" FRAME & COVER-T GASKETED	R-1642	INDENTED TOP	USED ON EXISTING STRUCTURE WITH HEIGHT CONSTRAINT
	4	7" FRAME & COVER-NON ROCKING OR T GASKET	R-1740-B	INDENTED TOP	USED FOR P.R.V. MANHOLES
GRATE	5	9" FRAME & GRATE-NON ROCKING OR T GASKET	R-2533	FLAT GRATE	PAVEMENT DRAIN
	6	DITCH GRATE-STOOL TYPE-TALL	R-4341-A	STOOL GRATE	HEAVY DUTY
	7	DITCH GRATE-STOOL TYPE-SHORT	R-4342	STOOL GRATE	LIGHT DUTY
	8	POND SKIMMER GRATE		1/2" STEEL PLATE	HOT DIPPED GALVANIZED, NOT SUBJECT TO H20 LOADING

NOTES:
1. CASTINGS SHALL BE ACCORDING TO MN/DOT SPEC 3321.1-.2 SUPPLIED BY FOUNDRIES THAT ARE APPROVED ON THE MN/DOT APPROVED/QUALIFIED PRODUCTS LIST
2. ALL CASTINGS SHALL COMPLY WITH AASHTO M-306
3. ALL CASTINGS SHALL COMPLY WITH U.S. CODE OF FEDERAL REGULATIONS 23CFR635.410, THE "BUY AMERICAN STEEL & IRON" REGULATION
4. ALL STORM SEWER CASTINGS SHALL INCLUDE IMPRINT FISH STAMP AND "DUMP NO WASTE"
5. COVERS SHALL BE STAMPED FOR SPECIFIC UTILITY (EX. SANITARY SEWER).

wbks	STRUCTURE TYPE 1	REVISED: 2/01/06 SHEET: 1 OF 1 PLATE NO. 1–01
wbks	CASTING REFERENCE NUMBERS	REVISED: 12/31/19 SHEET: 1 OF 1 PLATE NO. 1–11

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ZUMBROTA, MN

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ZUMBROTA APARTMENTS

ZUMBROTA, MN

DETAILS

SHEET 26 OF 29 SHEETS

STANDARD CASTING ASSEMBLIES

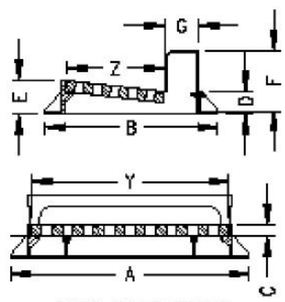
PLATE NO. 1-12
SHEET: 1 OF 2
REVISED: 12/31/19

	CASTINGS – STRUCTURE TYPE 1									
TYPE	DESCRIPTION	A	B	C	D	E	F	G	Y	Z
B	3' CURB INLET FRAME, GRATE & BOX	43	31	1 15/16	4	6	11 5/16	5 3/4	35 1/4	17 3/4
C	3' DRIVEWAY INLET FRAME & GRATE	43	31	1 7/8	4	6			35 3/4	22 3/4
V	3' CURB INLET FRAME, GRATE & BOX	43	31	1 15/16	4	6	11 5/16	5 3/4	35 1/4	17 3/4

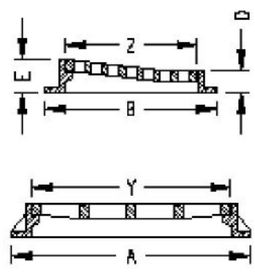
CASTINGS – STRUCTURE TYPE 1			
TYPE	MINIMUM OPENING	GRATE SLOTS	REMARKS
B	1.56 SQ. FT.	DIAGONAL	
C	2.5 SQ. FT.	PARALLEL (BICYCLE SAFE)	USE WHERE DRIVEWAY PRECLUDES USE OF TYPE B IN BATTERFACE CURB
V	1.88 SQ. FT.	PERPENDICULAR VANE	USE WHEN STREET GRADE EXCEEDS 2%

ALL DIMENSIONS ARE MINIMUM AND IN INCHES UNLESS OTHERWISE NOTED.

NOTES:
1. CASTINGS SHALL BE ACCORDING TO MN/DOT SPEC 3321.1–.2 SUPPLIED BY FOUNDRIES THAT ARE APPROVED ON THE MN/DOT APPROVED/QUALIFIED PRODUCTS LIST
2. ALL CASTINGS SHALL COMPLY WITH AASHTO M-306
3. ALL CASTINGS SHALL COMPLY WITH U.S. CODE OF FEDERAL REGULATIONS 23CFR635.410, THE "BUY AMERICAN STEEL & IRON" REGULATION
4. ALL STORM SEWER CASTINGS SHALL INCLUDE IMPRINT FISH STAMP AND "DUMP NO WASTE"



CURB INLET FRAME



DRIVEWAY INLET FRAME

STANDARD CASTING ASSEMBLIES

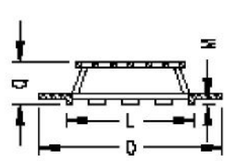
PLATE NO. 1-12
SHEET: 2 OF 2
REVISED: 12/31/19

CASTINGS – OTHER STRUCTURES							
TYPE	DESCRIPTION	L	M	N	O	P	Q
1	9" FRAME & COVER-GASKETED	23	1 1/2	21	35	9	
2	9" FRAME & COVER-GASKETED	25 3/4	7/8	24	35 7/16	9	
3	7" FRAME & COVER-GASKETED	26	1 1/2	24 1/8	35 7/8	6 15/16	
4	7" FRAME & COVER-NON ROCKING	32	1 1/2	30	45 1/2	7	
5	9" FRAME & GRATE-NON ROCKING	22	1 1/2	20	33	8	
6	DITCH GRATE-STOOL TYPE-TALL	23	1 7/16		33		8 11/16
7	DITCH GRATE-STOOL TYPE-SHORT	23	1 1/2		33		6 5/8
8	POND SKIMMER GRATE	1/2" STEEL PLATE					1/2

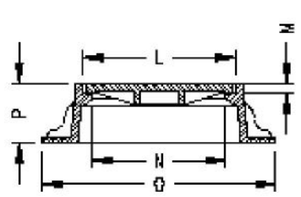
ALL DIMENSIONS ARE MINIMUM AND IN INCHES UNLESS OTHERWISE NOTED.

CASTINGS – OTHER STRUCTURES		
TYPE	MINIMUM OPENING	REMARKS
1		BOLTED LID, USED IN FLOOD PRONE AREAS & IN CONCRETE PAVING
2		WITH TWO CI PICK HOLES
3		WITH TWO CI PICK HOLES
4		USED FOR P.R.V. MANHOLES
5	1.1 SQ. FT.	PAVEMENT DRAIN
6	2.5 SQ. FT.	HEAVY DUTY
7	1.73 SQ. FT.	LIGHT DUTY
8	7.61 SQ. FT.	HOT DIPPED GALVANIZED, NOT SUBJECT TO H20 LOADING

NOTES:
1. CASTINGS SHALL BE ACCORDING TO MN/DOT SPEC. 3321.1–.2 SUPPLIED BY FOUNDRIES THAT ARE APPROVED ON THE MN/DOT APPROVED/QUALIFIED PRODUCTS LIST
2. ALL CASTINGS SHALL COMPLY WITH AASHTO M-306
3. ALL CASTINGS SHALL COMPLY WITH U.S. CODE OF FEDERAL REGULATIONS 23CFR635.410, THE "BUY AMERICAN STEEL & IRON REGULATION"
4. ALL STORM SEWER CASTINGS MAY INCLUDE IMPRINT FISH STAMP AND "DUMP NO WASTE"



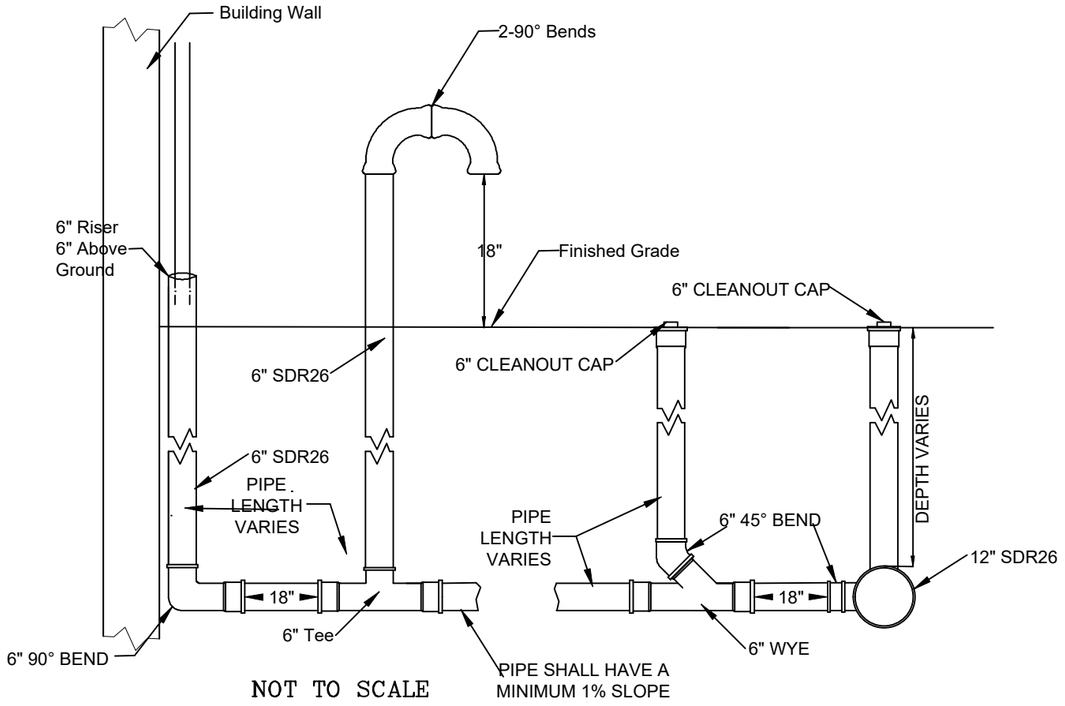
DITCH GRATE



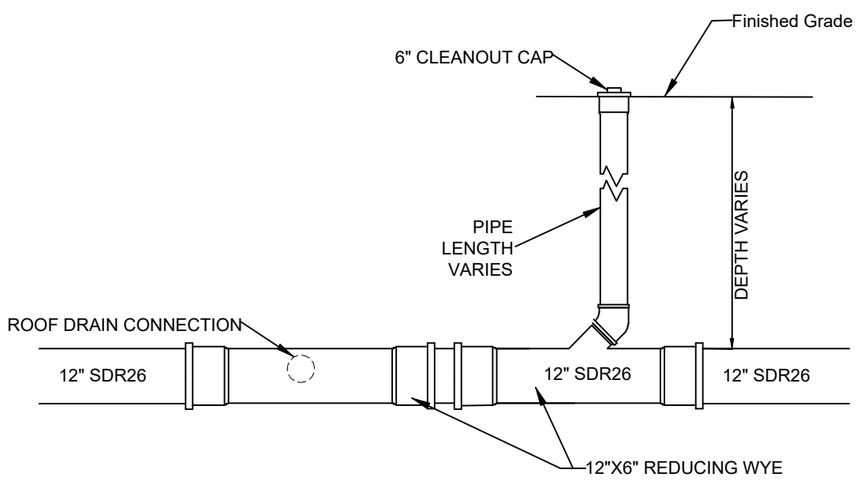
MANHOLE FRAME & COVER

NOTE

ALL PIPE AND FITTINGS SHALL BE SDR26 WITH WATER TIGHT CONNECTIONS



ROOF DRAIN CONNECTION



12" COLLECTOR PIPE AT ROOF DRAIN CONECTION

Engineering, Surveying & Planning
JOHNSON & SCOFIELD INC.
1203 Main Street Red Wing, MN 55066
ph. 651.388.1558 fax 651.388.1559

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Steven P. Voigt, PE

DATE 3-3-2021 REG. NO. 20034

DESIGNED SPD\SPV
DRAWN SPD
CHECKED SPV

REVISED	BY	DATE
ADDENDUM #2	SPD	3/11/2021

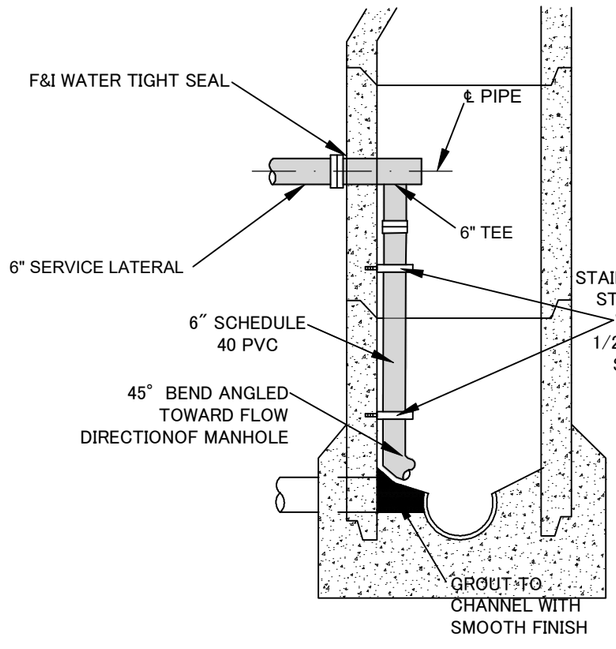
LATEST REVISION:3-11-21

Prepared For:
ANDY BAARTMAN
A-1 CLEANING
P.O.B. 31
RED WING, MN 55066
PHONE: 651-301-5103

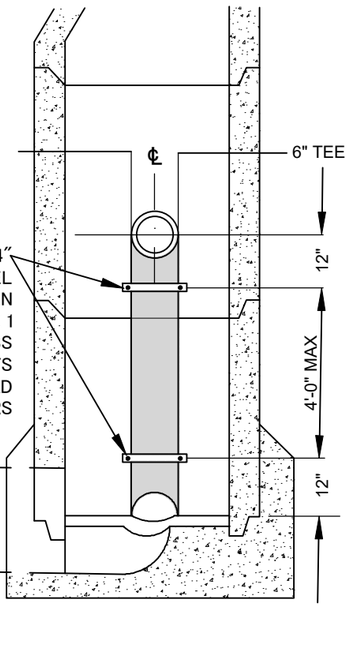
ZUMBROTA APARTMENTS

ZUMBROTA, MN

DETAILS



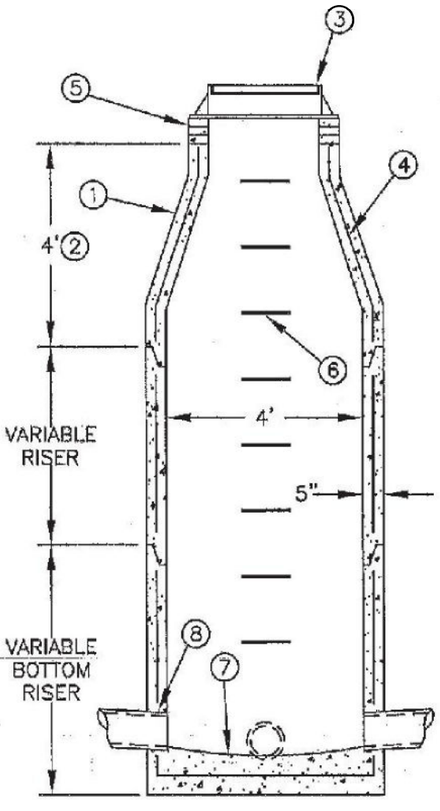
SIDE SECTION



FRONT SECTION

NOT TO SCALE

INSIDE DROP MANHOLE



NOTES:

1. CONE SHALL BE ECCENTRIC. MnDOT PLATE NO. 4005 TYPE B CONE SECTION.
2. CONE SECTION HEIGHT MAY VARY AS REQUIRED FOR SPECIFIC MH.
3. REFER TO PLANS AND/OR SPECIAL PROVISIONS FOR FRAME AND LID TYPE.
4. REINFORCING SHALL BE A MINIMUM OF SINGLE LINE STEEL WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.12 SQ. IN. PER FOOT IN EACH DIRECTION.
5. HIGH DENSITY POLYETHYLENE ADJUSTING RINGS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS STARTING ON A SOLID, CLEANED CONE SECTION OF THE INPLACE MANHOLE. THE OUTSIDE OF THE ENTIRE RING SECTION SHALL BE SEALED TO THE STRUCTURE WITH A UNI-BAND (RUBBER) SEALING SYSTEM.
6. STEPS, ORIENTED ON THE UPSTREAM SIDE OF THE MH, ARE SPACED 16" O.C. AND SHALL CONFORM TO MnDOT PLATE NO. 4180.
7. MONOLITHIC BASE AND INVERTS SUBJECT TO APPROVAL BY THE ENGINEER. FIELD POURED INVERTS AND/OR SEPARATE BASE SLAB MAY BR REQUIRED IN SOME INSTANCES. INVERT CHANNEL DEPTH SHALL NOT BE LESS THAN 1/2 THE PIPE SIZE.
8. WATER TIGHT SEAL SHALL CONFORM TO MnDOT PLATE NO. 4007.

NOT TO SCALE

SANITARY SEWER MANHOLE

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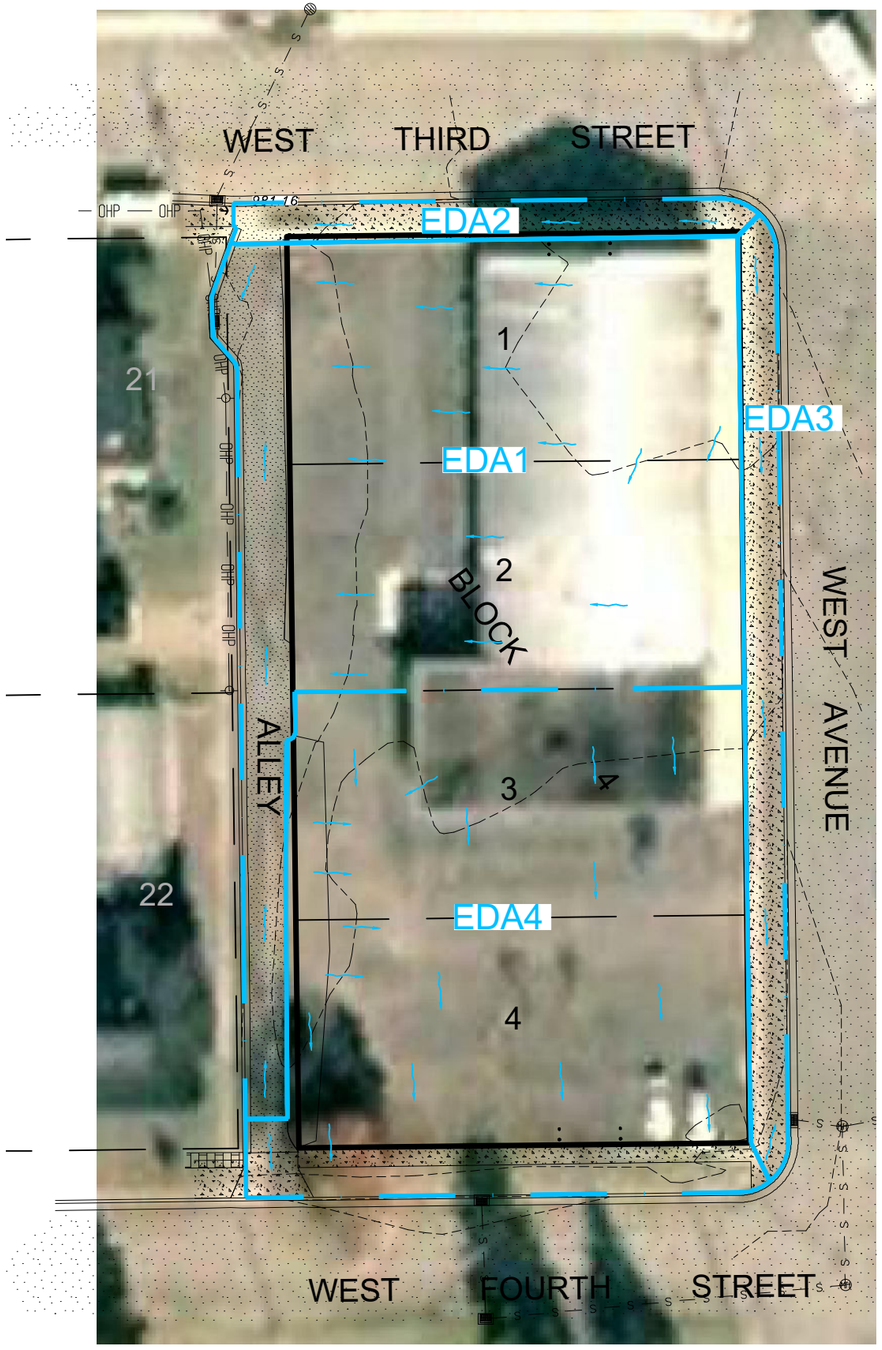
ZUMBROTA APARTMENTS
ZUMBROTA, MN

DETAILS

SHEET 28 OF 29 SHEETS

PRE DEVELOPMENT RUNOFF



0 40 80 120

SCALE 1"=40'

LEGEND

- DENOTES EXISTING DRAINAGE AREA
- DENOTES EXISTING DRAINAGE AREA FLOW PATH
- DENOTES SURFACE WATER FLOW DIRECTION
- DENOTES PROPOSED DRAINAGE AREA
- DENOTES PROPOSED DRAINAGE AREA FLOW PATH

CONTRIBUTING DRAINAGE AREAS

EDA1	*EDA2*	*EDA3*	*EDA4*
0.396 ACRES	*0.032 ACRES*	*0.057 ACRES*	*0.378 ACRES*
0.396 ACRES IMPERVIOUS	*0.032 ACRES IMPERVIOUS*	*0.057 ACRES IMPERVIOUS*	*0.378 ACRES IMPERVIOUS*
TCL:410 FT	*TCL:62 FT*	*TCL:58 FT*	*TCL:454 FT*
AV SLOPE = 2.38%	*AV SLOPE = 4.38%*	*AV SLOPE = 2.34%*	*AV SLOPE = 2.76%*
CN = 98	*CN = 98*	*CN = 98*	*CN = 98*
LFP = 224 FT	*LFP = 157 FT*	*LFP = 248 FT*	*LFP = 208 FT*
TC = 2.9 MIN	*TC = 1.6 MIN*	*TC = 3.2 MIN*	*TC = 2.6 MIN*
PDA1	PDA2	PDA3	PDA4
0.20 ACRES	0.12ACRES	0.25 ACRES	0.28 ACRES
0.17 ACRES IMPERVIOUS	0.11 ACRES IMPERVIOUS	0.21 ACRES IMPERVIOUS	0.27 ACRES IMPERVIOUS
TCL: 325 FT	TCL: 325 FT	TCL: 2539 FT	TCL: 3653 FT
AV SLOPE = 3.81%	AV SLOPE = 2.50%	AV SLOPE = 2.33%	AV SLOPE = 2.91%
AV CN = 68.5	AV CN = 68.5	AV CN = 68.5	AV CN = 68.5
LFP = 230 FT	LFP = 134 FT	LFP = 238 FT	LFP = 264 FT
TC = 3.7 MIN	TC = 2.5 MIN	TC = 4.8 MIN	TC = 3.4 MIN

TOTAL DRAINAGE AREA= 0.863 ACRES
EXISTING CONDITIONS HISTORICAL IMPERVIOUS AREA= 0.863 ACRES (100%)
PROPOSED IMPERVIOUS AREA= 0.76 ACRES (88.06%)
DECREASE OF IMPERVIOUS AREA FROM HISTORICAL= 0.103 ACRES

PRE DEVELOPMENT RUNOFF

DA	Q2 CFS	Q10 CFS	Q100 CFS
1	1.88	2.90	5.12
2	0.15	0.24	0.42
3	0.27	0.41	0.73
4	1.81	2.80	4.94
EXISTING CONDITIONS HISTORICAL IMPERVIOUS	4.11	6.35	11.21

POST DEVELOPMENT RUNOFF

DA	Q2 CFS	Q10 CFS	Q100 CFS
1	0.71	1.23	2.36
2	0.52	0.84	1.54
3	0.84	1.46	2.80
4	1.25	1.97	3.52
TOTAL POST DEVELOPMENT RUNOFF*	3.32	5.50	10.22

DEVELOPMENT RUNOFF SUMMARY

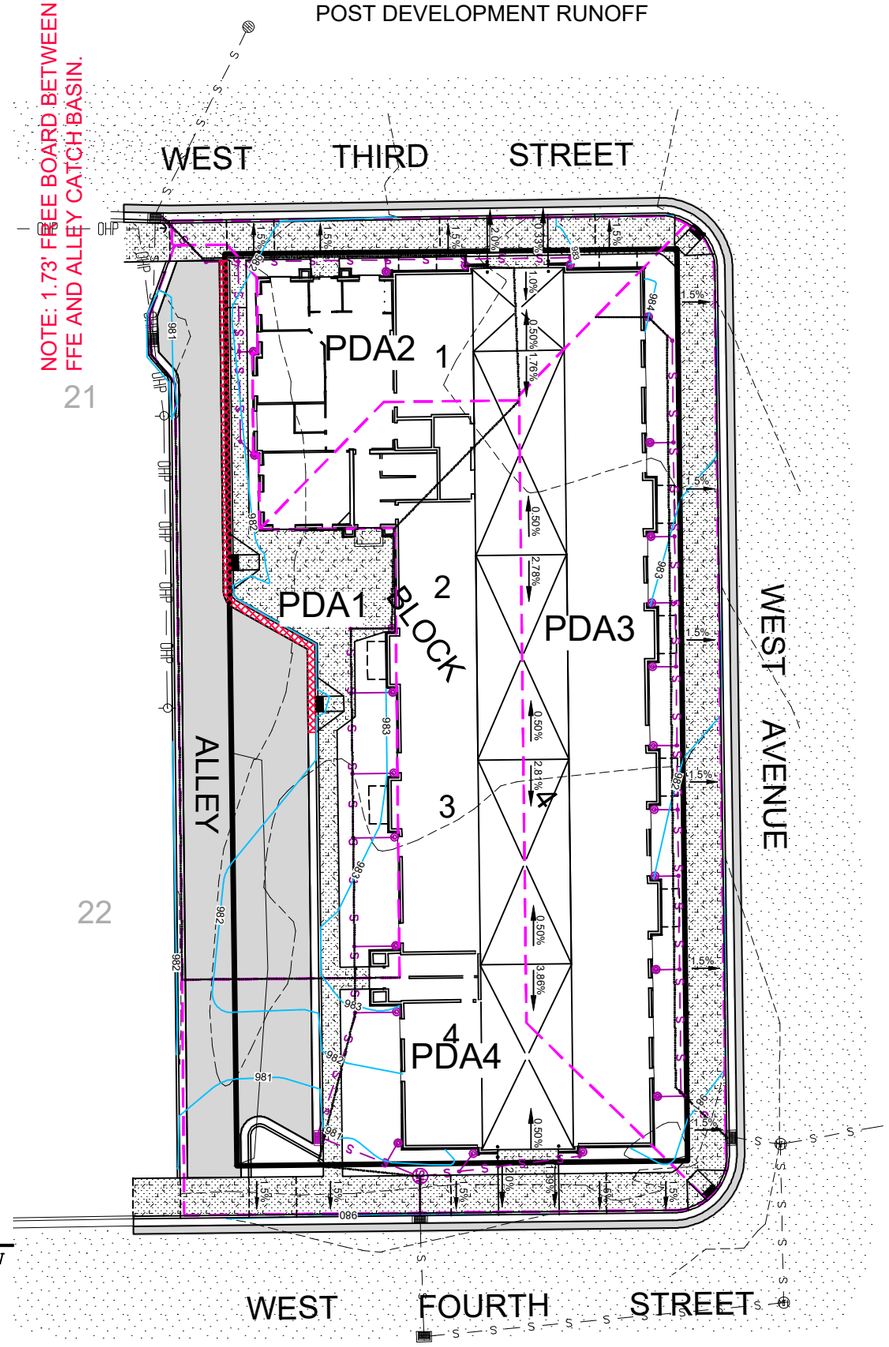
	Q2 CFS	Q10 CFS	Q100 CFS
EXISTING CONDITIONS HISTORICAL IMPERVIOUS	4.11	6.35	11.21
TOTAL POST DEVELOPMENT RUNOFF*	3.32	5.50	10.22
TOTAL CHANGE (DECREASE)	0.79	0.85	0.99

HYDROLOGY NOTES

- *HYDROLOGY CALCULATIONS ONLY INCLUDE THE DRAINAGE AREAS SHOWN*
- *TOTAL DEVELOPMENT RUNOFF IS CALCULATED USING NULL NODE IN HYDROCAD*
- *ALL SOILS ON SITE ARE "B" TYPE SOILS WITH POORLY GRADED SAND UNDER APPROXIMATELY 2 FEET OF SLIGHTLY ORGANIC SANDY SILT, LEAN CLAY, AND SILTY SAND. SEE SOIL BORING LOGS.*

POST DEVELOPMENT RUNOFF

NOTE: 1.73' FREE BOARD BETWEEN FFE AND ALLEY CATCH BASIN.



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EXISTING AND PROPOSED HYDRAULIC CONDITIONS

SHEET 29 OF 29 SHEETS