

P:\projects\14025\000\Contracts\14-371-5C\01_Civil\Sheets\G-000.dwg 6/6/2016 1:57 PM
PLOT DATE: 8/24/2016 10:45 AM PLOTTED BY: BORIS LYALIN

Contract Plans
for
Flood Control Project on Willow Road
at McDonald Creek Tributary A

Prospect Heights, Illinois

Contract 14-371-5C



Room 508, 100 East Erie Street
Chicago, Illinois 60611

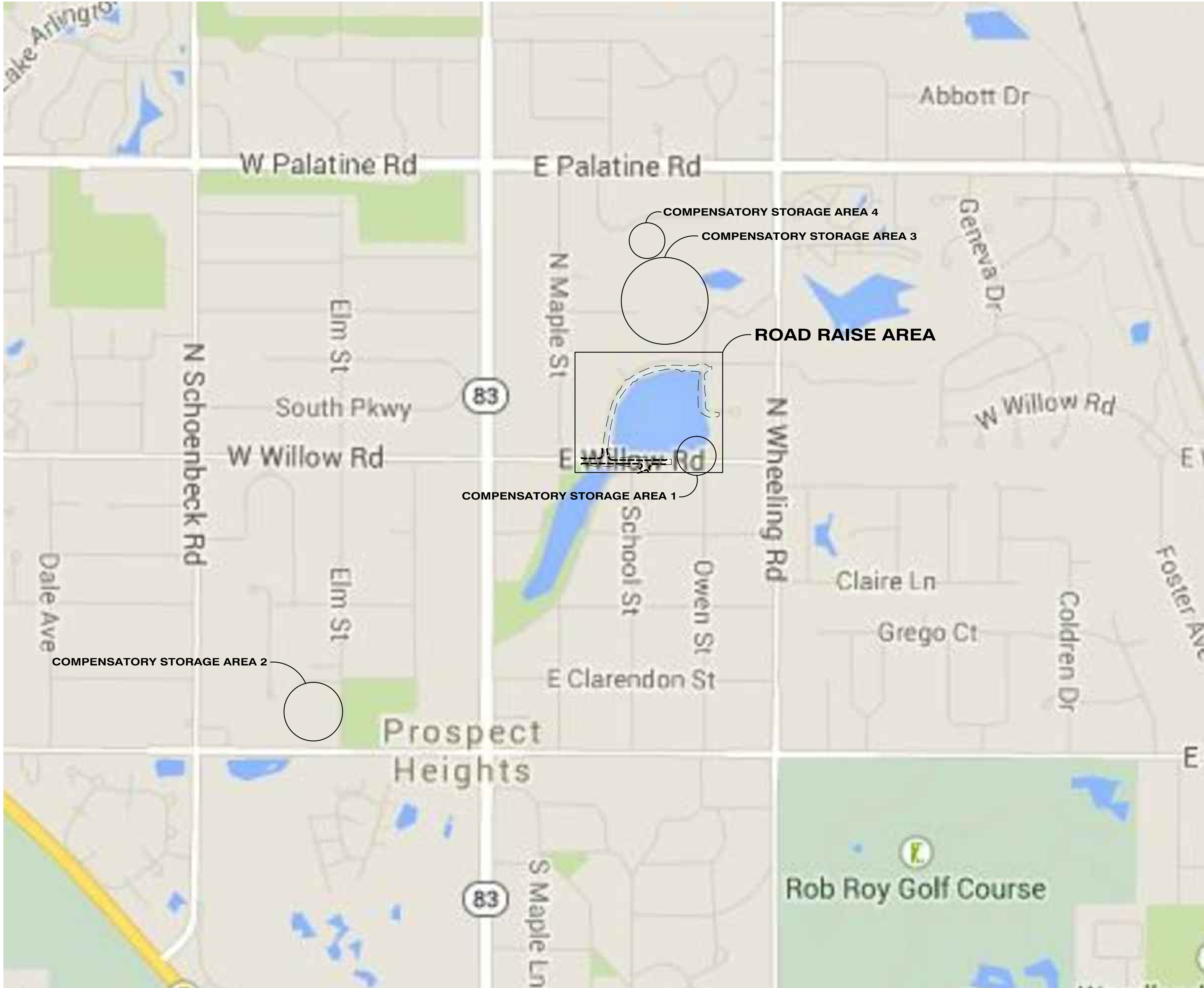
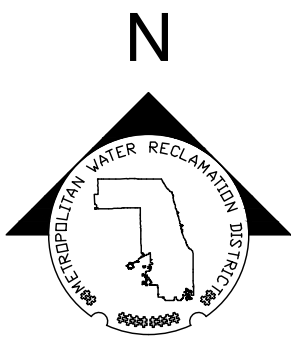
Board of Commissioners

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August, 2016
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Seal

CONTRACT14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

LOCATION MAP

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

Designed by:
DH

Drawn by:
BFL

Date:
DECEMBER 2015

Checked by:
DH

Reviewed by:
RH







Scale:
AS SHOWN

**Globetrotters**
ENGINEERS - ARCHITECTS
Chicago, Illinois 60606 U.S.A.
PH 312-622-6400

Rev.	Description	Appr.	Date

SITE UTILITIES	
	Cable Television
	City Electric
	Electric
	Electric Overhead
	Light Post
	Light Pole
	Power Pole
	Power Pole Light
	Guy Pole
	Electrical Vault
	Fiber Optics
	Gas (supply)
	Gas Valve Box
	Other (Unknown)
	Telephone
	Telephone Pole
	Telephone Vault
	Utility Pole
	Fence
	Fence Corner
	Gate
	Guardrail
	Guardpost
	Drain Tile
	Sewer - Combined
	Sewer - Sanitary
	Sanitary Manhole
	Sewer - Storm
	Inlet
	Catch Basin
	Storm Manhole
	Curb Inlet
	Culvert End Section
	Water (supply)
	Fire Hydrant
	Water Manhole
	Water Valve Box
	B. Box
	Thrust Block

SITE SYMBOLS	
	Existing Contour
	Proposed Contour
	Existing Grade
	Proposed Grade
	Drainage Direction
	Ditch Flow
	Summit
	Temporary Silt Fence
	Erosion Control
	Ditch Check
	Benchmark
	Soil Boring P-1 O'Brien & Associates (2014) B-1 Patrick Engineering (2008) MWRD-40 MWRDGC (1969)
	Dbl Pole Sign
	Sngl Pole Sign
	Mail Box
	Property Corner
	Property Line
	Centerline
	Exist. Traffic Flow
	Prop. Traffic Flow
	Deciduous Tree
	Evergreen Tree
	Bush
	Shrub
	Stump
	Hedge
	<u>Storm</u> Structure Type & No RIM Elevation Invert Elevation Invert 2 Elevation
	<u>Sanitary</u> Structure Type & No RIM Elevation Invert Elevation Invert 2 Elevation
	Sheet Piling Wall
	Waters of the US
	Wetland
	Approximate Limit of Fill
	Bird House
	Iron Pipe Found
	Flag Pole

SITE SYMBOLS	
	Culvert Inlet Protection
	Inlet Protection
	Silt Fence
	Floating Turbidity Curtain
	Erosion Control Blanket
	Tree Protection

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

Designed by: DH	Checked by: DH
Drawn by: BFL	Reviewed by: RH
Date: DECEMBER 2015	Scale: AS SHOWN

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CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

GENERAL SYMBOLS & ABBREVIATIONS

Sheet Number: G-003

Page Number: ##

GENERAL

- CONTRACTOR SHALL VERIFY DIMENSIONS AND SITE CONDITIONS IN FIELD AND REPORT ANY DISCREPANCY TO THE ENGINEER BEFORE STARTING THE CONSTRUCTION WORK AND DURING CONSTRUCTION.
- ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). HORIZONTAL COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM EAST ZONE, NAD 83-03.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND FEES NOT SPECIFICALLY PROVIDED BY THE MWRDGC IN THE CONTRACT SPECIFICATIONS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ARRANGING AND COORDINATING ALL REQUIRED INSPECTIONS BY REGULATORY AGENCIES INCLUDING PROVIDING ALL LABOR EQUIPMENT AND MATERIALS NECESSARY TO ACCOMMODATE THE INSPECTIONS.
- CONTRACTOR SHALL TAKE ALL NECESSARY SAFETY PRECAUTIONS TO PROTECT THE EXISTING SITE TO REMAIN, ABUTTING PROPERTY, UTILITIES, PEDESTRIANS AND VEHICULAR TRAFFIC DURING ALL CONSTRUCTION OPERATIONS AND ACTIVITIES. CONTRACTOR IS RESPONSIBLE FOR SECURING THE WORKSITE AFTER CONSTRUCTION HOURS.
- CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ANY DAMAGE TO THE SITE AND PRIVATE PROPERTY DAMAGED BY CONSTRUCTION AND RESTORATION TO ORIGINAL CONDITIONS TO THE SATISFACTION OF THE PROPERTY OWNER.
- ALL EXISTING SIGNS, MAILBOXES, FENCES, ETC. THAT INTERFERE WITH CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR AND REPLACED AT THE END OF CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. CONTRACTOR SHALL ERECT AND MAINTAIN TEMPORARY MAIL BOXES FOR EACH RESIDENCE ACCESSIBLE TO POSTAL SERVICE AND PROPERTY OWNERS.
- CONTRACTOR IS RESPONSIBLE FOR SECURING ALL EQUIPMENT AND MATERIAL STORED ON THE SITE.

UTILITIES AND DRAINAGE

- THE APPROXIMATE LOCATIONS OF EXISTING UTILITIES, WATER PIPES, SEWERS, CONDUITS, AND OTHER UNDERGROUND STRUCTURES SHOWN ON THE DRAWINGS ARE BASED ON DRAWINGS AND DATA RECEIVED FROM VARIOUS SOURCES. HOWEVER, THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO DOES NOT GUARANTEE THEIR ACCURACY.
- CONTRACTOR SHALL CONTACT JULIE AT 1-800-892-0123 AT LEAST 48 HOURS PRIOR TO STARTING WORK.
- THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION OPERATIONS AND SHALL REPORT TO THE ENGINEER ANY OMISSIONS AND DISCREPANCIES FROM THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH ARE OCCASIONED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE COST OF THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THIIIS CONTRACT.
- CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 21 CALENDAR DAYS IN ADVANCE OF ANY UTILITY SHUT DOWN.
- CONTRACTOR SHALL PROTECT EXISTING UTILITIES THROUGHOUT CONSTRUCTION. INCLUDING ANY PRIVATE UTILITIES (I.E. SPRINKLER SYSTEMS)
- CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE FACILITIES FREE FROM DEBRIS THROUGHOUT THE PERIOD OF CONSTRUCTION.
- CONTRACTOR SHALL CLEAN ALL STORM SEWERS AND CULVERTS WITHIN THE WORK LIMITS AT THE CONCLUSION OF CONSTRUCTION.

AIR QUALITY

- BURNING OF WASTE IS NOT ALLOWED ON THE PROJECT SITE.
- CONTRACTOR SHALL PROVIDE DUST CONTROL MEASURES AS PER IDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2012, ART. 107.36. AND PER CITY OF PROSPECT HEIGHTS ORDINANCES. DUST SHALL BE KEPT TO A MINIMUM DURING DRY PERIODS BY SPRAYING WATER AS REQUIRED BY THE CITY OF PROSPECT HEIGHTS INSPECTOR'S SATISFACTION AND IS TO BE CONSIDERED INCIDENTAL TO THE CONTRACT. WATER MAY BE EXTRACTED FROM HILLCREST LAKE FOR THIS PURPOSE **VERIFY WITH PROSPECT HEIGHTS**.

ACCESS

- CONTRACTOR SHALL MAINTAIN RESIDENT VEHICULAR ACCESS TO HOMES THROUGHOUT CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN EMERGENCY VEHICLE ACCESS THROUGHOUT CONSTRUCTION.

CONTRACT14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

GENERAL NOTES

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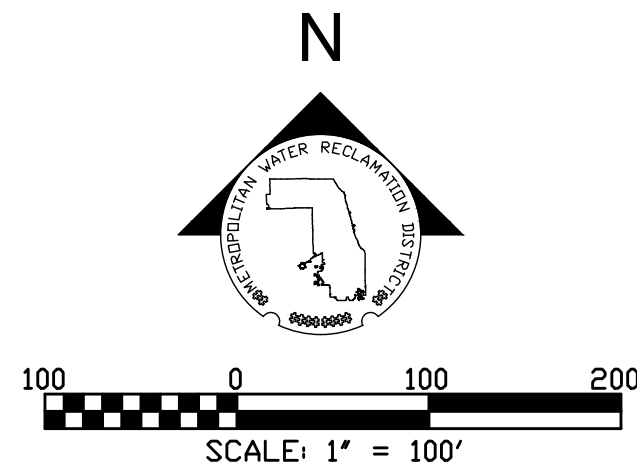
G-004

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METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

Designed by: DH	Checked by: DH
Drawn by: BFL	Reviewed by: RH
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1. GEOTECHNICAL INFORMATION IS INCLUDED IN APPENDIX

Seal

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G-005
Page Number: X

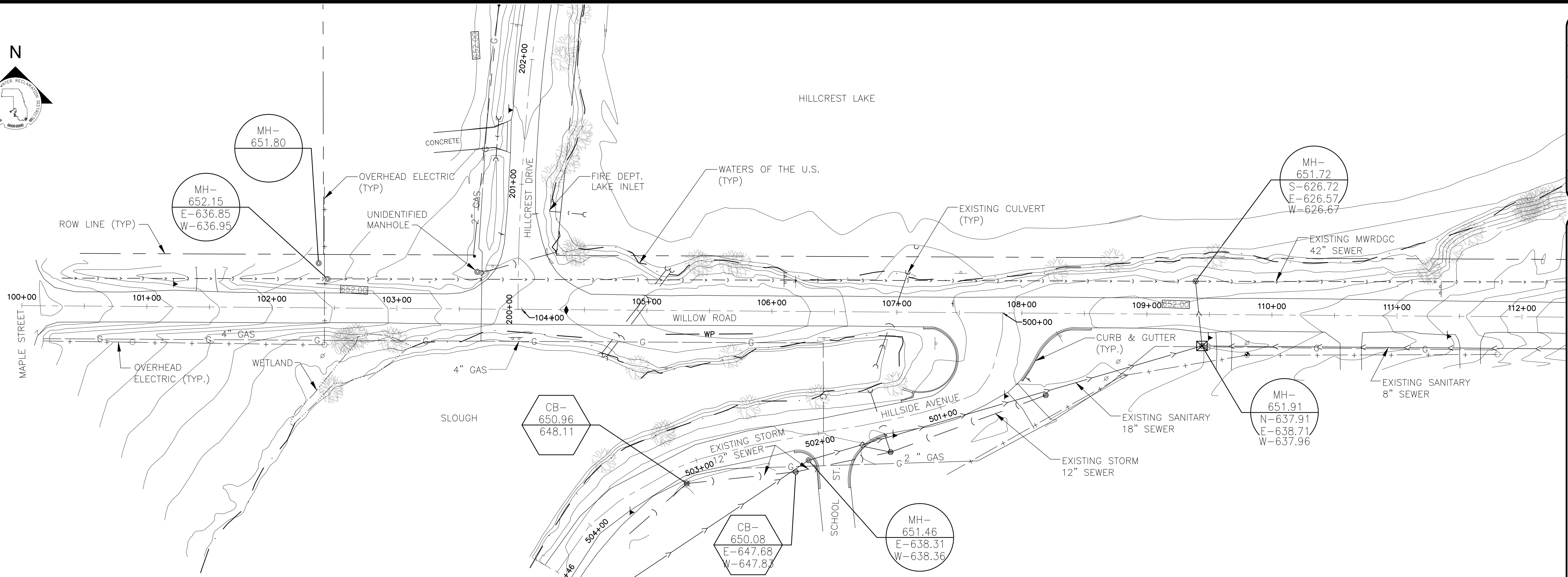
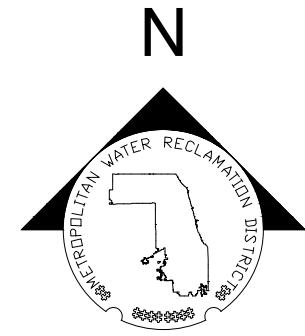
METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

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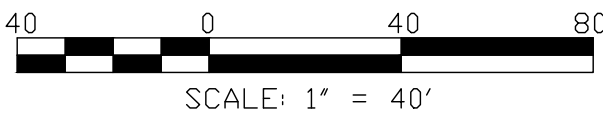
Globetrotters
Engineering Corporation
ENGINEERS - ARCHITECTS
300 S Wacker Drive
Chicago, Illinois 60606 U.S.A.
Ph 312-922-6400

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- NOTES:
1. UNDERGROUND UTILITY SIZE AND LOCATION ARE APPROXIMATE BASED ON PROSPECT HEIGHTS GIS DATA, JULIE UTILITY MAPS AND FIELD OBSERVATION.
 2. CONTRACTOR TO FIELD VERIFY UTILITIES PRIOR TO WORK.
 3. TREES SHOWN ARE BASED ON SURVEY PERFORMED IN JANUARY 2015, FOR TREES GREATER THAN 6" DIAMETER. ADDITIONAL TREES AND LANDSCAPING MAY EXIST. CONTRACTOR TO FIELD VERIFY PRIOR TO WORK.
 4. DRIVEWAYS ARE ASPHALT UNLESS NOTED OTHERWISE.
 5. GEOTECHNICAL INFORMATION IS INCLUDED IN APPENDIX

- FINAL DESIGN NOTES:
1. MH INVERTS FOR CERTAIN PIPES IN PROJECT AREA TO BE PICKED UP IN FINAL DESIGN.
 2. GAS LINE TO BE FIELD LOCATED AS NEEDED FOR RELOCATION.



Seal

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

WILLOW RD DETAILED SITE PLAN
EXISTING CONDITIONS

METROPOLITAN WATER RECLAMATION DISTRICT

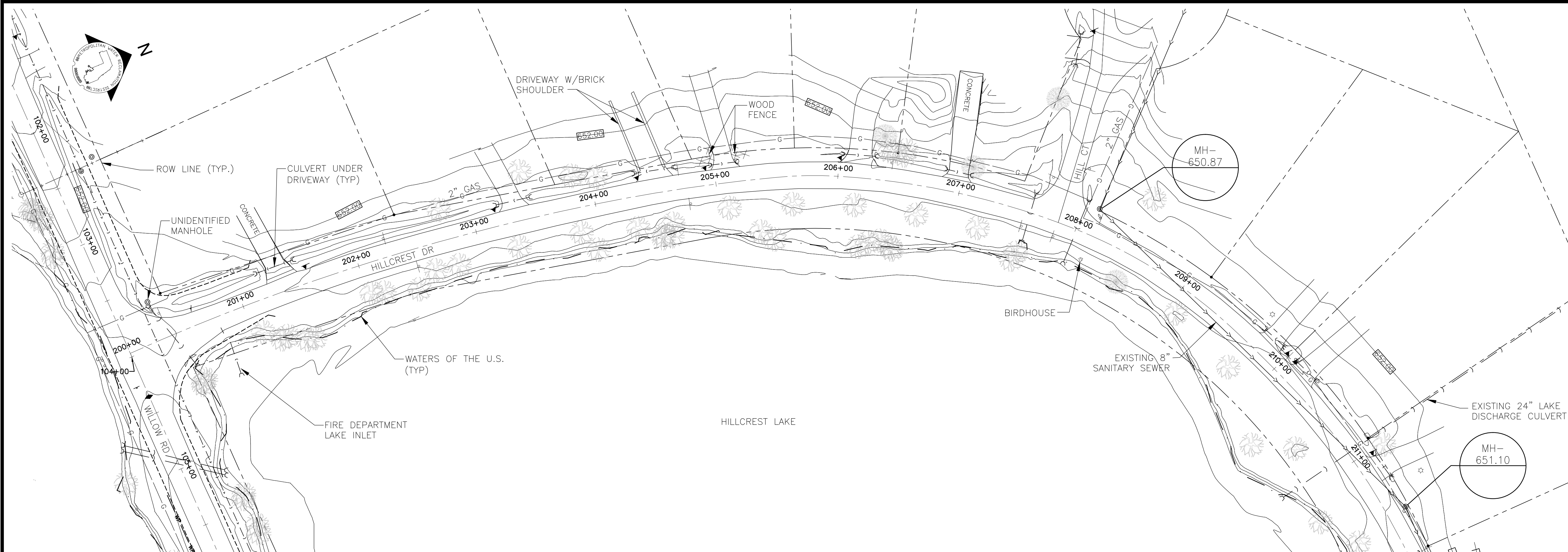
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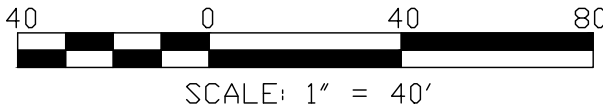


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Page Number: XX



NOTES:

1. UNDERGROUND UTILITY SIZE AND LOCATION ARE APPROXIMATE BASED ON PROSPECT HEIGHTS GIS DATA, JULIE UTILITY MAPS AND FIELD OBSERVATION.
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4. DRIVEWAYS ARE ASPHALT UNLESS NOTED OTHERWISE.
5. GEOTECHNICAL INFORMATION IS INCLUDED IN APPENDIX



Seal

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

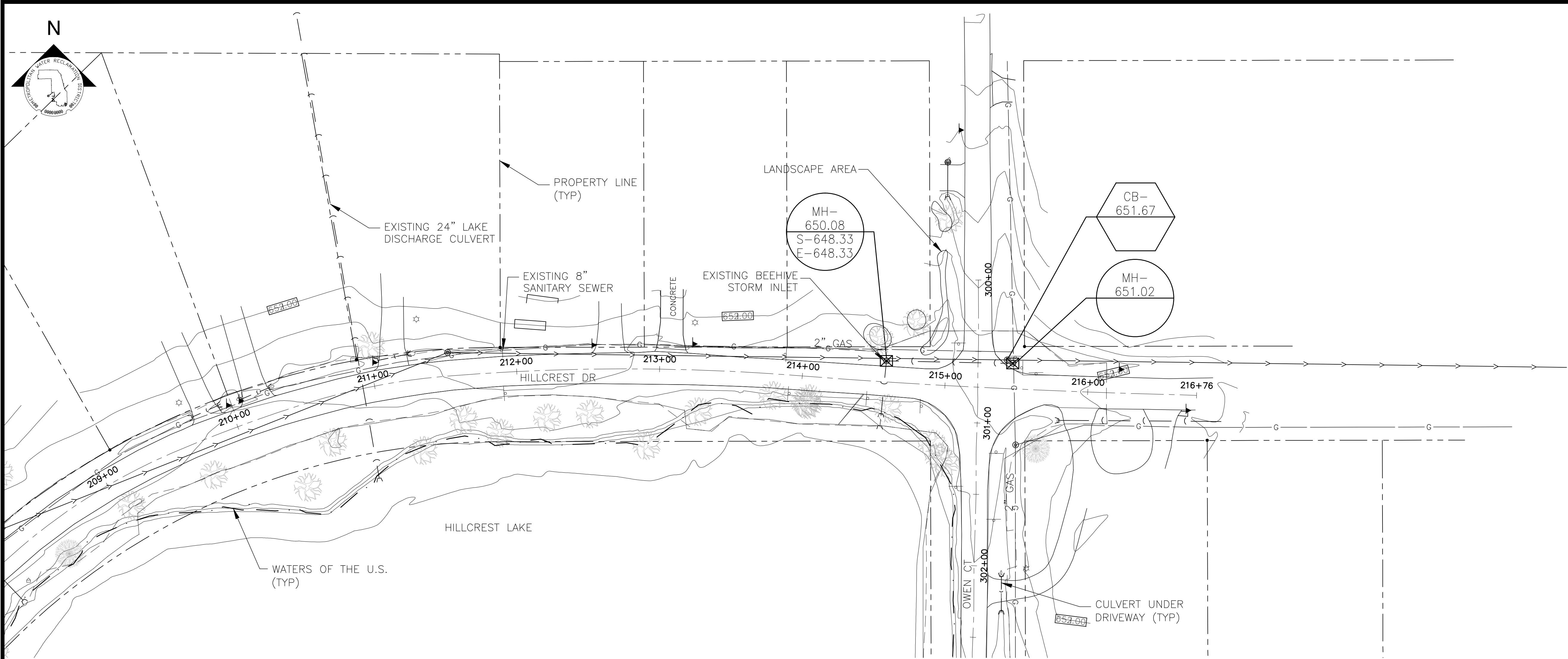
HILLCREST DRIVE DETAILED SITE PLAN
EXISTING CONDITIONS (SHEET 1 OF 2)

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

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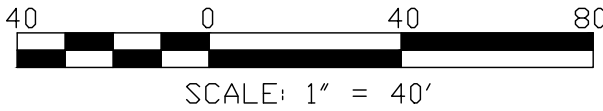
Rev.	Description	Appr.	Date





NOTES:

1. UNDERGROUND UTILITY SIZE AND LOCATION ARE APPROXIMATE BASED ON PROSPECT HEIGHTS GIS DATA, JULIE UTILITY MAPS AND FIELD OBSERVATION.
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4. DRIVEWAYS ARE ASPHALT UNLESS NOTED OTHERWISE.
5. GEOTECHNICAL INFORMATION IS INCLUDED IN APPENDIX



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CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

HILLCREST DRIVE DETAILED SITE PLAN
EXISTING CONDITIONS (SHEET 2 OF 2)

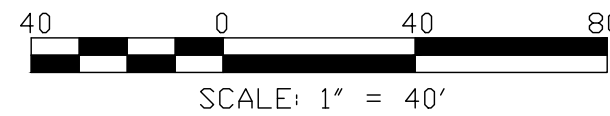
METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

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Sheet Number:
C-103
Page Number: XX



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**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

OWEN COURT DETAILED SITE PLAN
EXISTING CONDITIONS

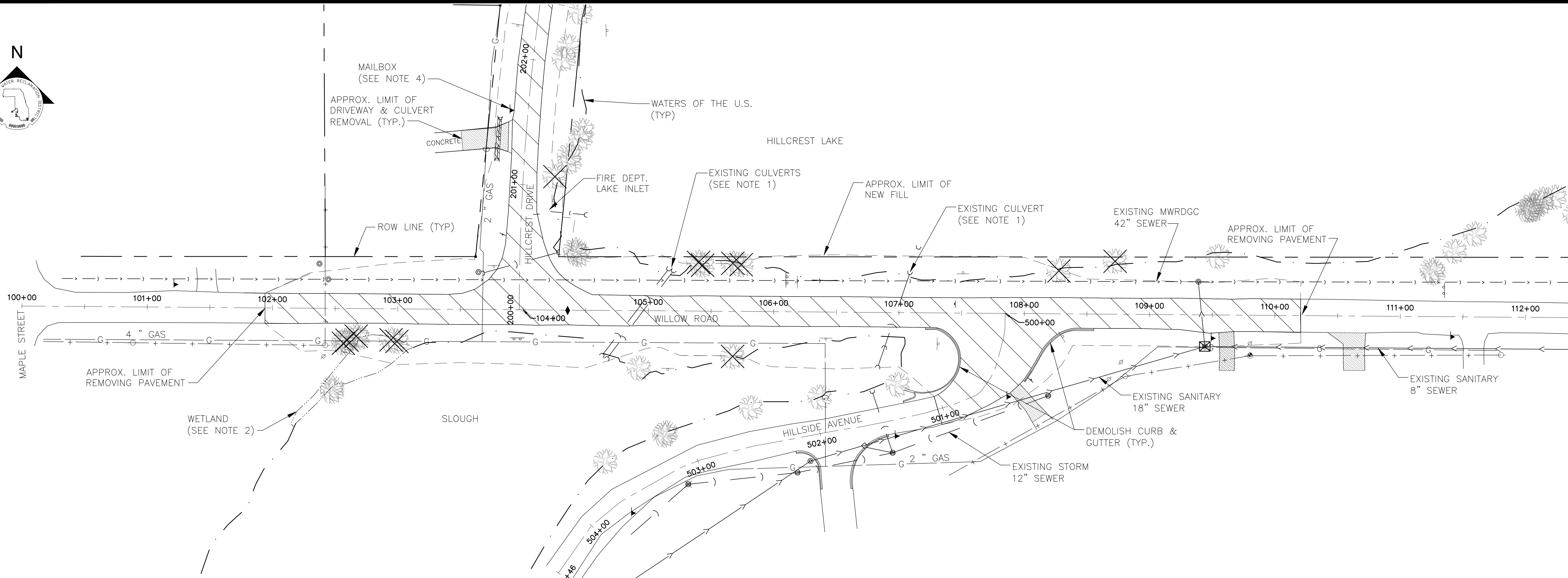
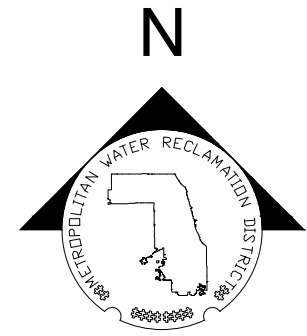
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Page Number: XX

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Date: DECEMBER 2015	Scale: AS SHOWN

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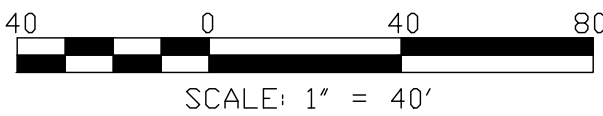


NOTES:

1. CONTRACTOR TO CLEAN EXISTING CULVERTS UNDER WILLOW ROAD. EXISTING CULVERTS ARE APPROXIMATELY HALF FULL OF SEDIMENT AND DEBRIS.
2. CONTRACTOR TO PROTECT EXISTING WETLAND - SEE SEDIMENT & EROSION CONTROL PLAN.
3. CONTRACTOR TO PROTECT ALL UTILITIES TO REMAIN.
4. CONTRACTOR TO TEMPORARILY REMOVE MAILBOXES DURING GRADING & PAVING. REPLACE AFTER COMPLETION. REPLACE POSTS AS NEEDED. CONTRACTOR SHALL ERCT AND MAINTAIN TEMPORARY MAIL BOXES FOR EACH RESIDENCE ACCESSIBLE TO POSTAL SERVICE AND PROPERTY OWNERS.
5. CONTRACTOR TO PROTECT TREES AND VEGETATION TO REMAIN.
6. CONTRACTOR TO ADJUST MANHOLE RIMS TO MEET PROPOSED GRADES.
7. CONTRACTOR TO TEMPORARILY REMOVE ROAD SIGNS AND REPLACE AFTER CONSTRUCTION. RESET SIGN HEIGHTS PER PROSPECT HEIGHTS AND CCDOTH STANDARDS. ADJUST SIGN LOCATIONS AS DIRECTED.
8. CONTOUR LINES TURNED OFF FOR DRAWING CLARITY.

FINAL DESIGN NOTES:

1. TREE DEMO WILL BE CHECKED ON A TREE BY TREE BASIS IN FINAL DESIGN TO ATTEMPT TO SAVE AS MANY AS POSSIBLE.
2. LIMITS OF DRIVEWAY DEMO TO BE REFINED ON AN INDIVIDUAL BASIS IN FINAL DESIGN.



Seal

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

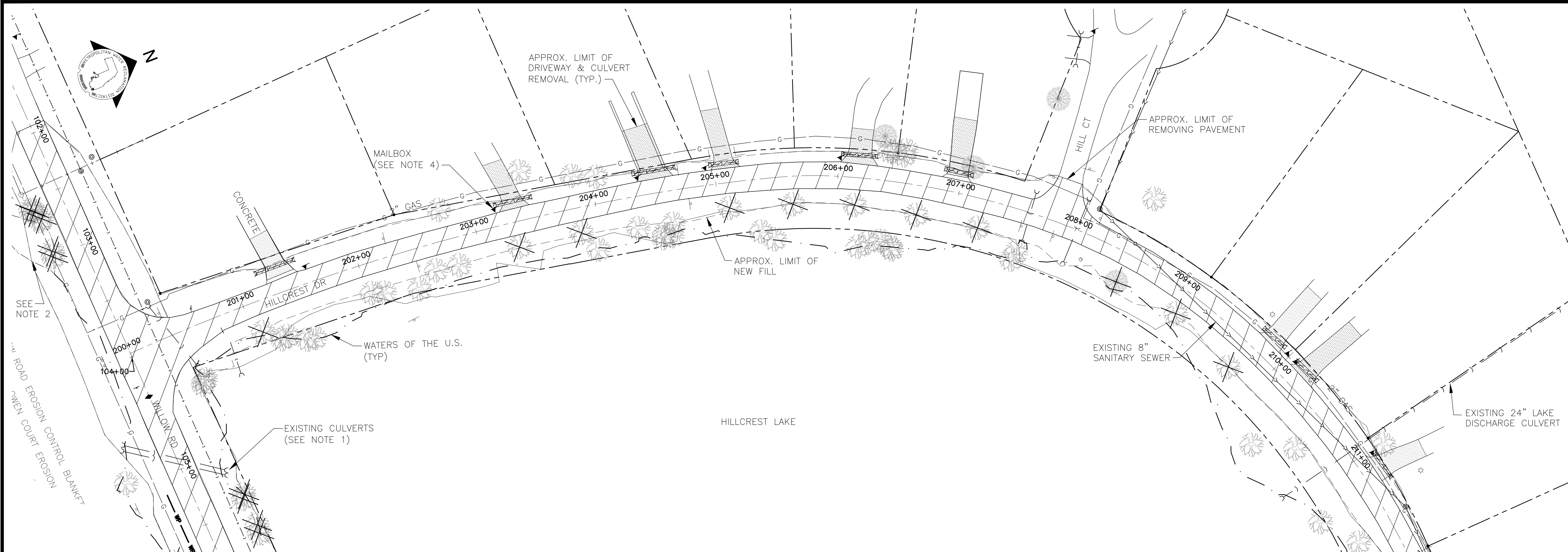
WILLOW RD DETAILED SITE PLAN
DEMOLITION PLAN



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BFL	RH
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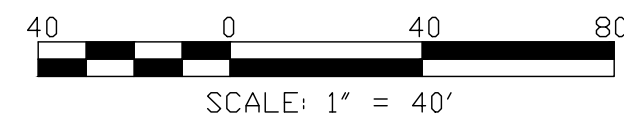
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C-105
Page Number: XX



1. CONTRACTOR TO CLEAN EXISTING CULVERTS UNDER HILLCREST DRIVE AT THE END OF CONSTRUCTION.
2. CONTRACTOR TO PROTECT EXISTING WETLAND - SEE SEDIMENT & EROSION CONTROL PLAN.
3. CONTRACTOR TO PROTECT ALL UTILITIES TO REMAIN.
4. CONTRACTOR TO TEMPORARILY REMOVE MAILBOXES DURING GRADING & PAVING. REPLACE AFTER COMPLETION. REPLACE POSTS AS NEEDED. CONTRACTOR SHALL ERECT AND MAINTAIN TEMPORARY MAIL BOXES FOR EACH RESIDENCE ACCESSIBLE TO POSTAL SERVICE AND PROPERTY OWNERS.
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8. CONTOUR LINES TURNED OFF FOR DRAWING CLARITY.

1. TREE DEMO WILL BE CHECKED ON A TREE BY TREE BASIS IN FINAL DESIGN TO ATTEMPT TO SAVE AS MANY AS POSSIBLE.
2. LIMITS OF DRIVEWAY DEMO TO BE REFINED ON AN INDIVIDUAL BASIS IN FINAL DESIGN.



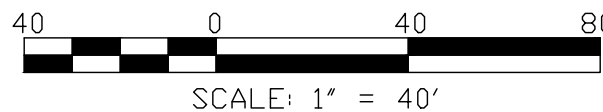
Seal

<div>  Globetrotters Engineering Corporation ENGINEERS - ARCHITECTS 1100 N. Dearborn, Suite 200 Chicago, Illinois 60610 U.S.A. Ph: 312-622-5400 </div>	
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Drawn by:	Reviewed by:
BFL	RH
Date:	Scale:
DECEMBER, 2015	AS SHOWN

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

HILLCREST DRIVE DETAILED SITE PLAN
DEMOLITION PLAN (SHEET 1 OF 2)

[illegible]



1. CONTRACTOR TO CLEAR EXISTING CULVERTS UNDER HILLCREST DRIVE.
2. CONTRACTOR TO PROTECT EXISTING WETLAND – SEE SEDIMENT & EROSION CONTROL PLAN.
3. CONTRACTOR TO PROTECT ALL UTILITIES TO REMAIN.
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8. CONTOUR LINES TURNED OFF FOR DRAWING CLARITY.

1. TREE DEMO WILL BE CHECKED ON A TREE BY TREE BASIS IN FINAL DESIGN TO ATTEMPT TO SAVE AS MANY AS POSSIBLE.
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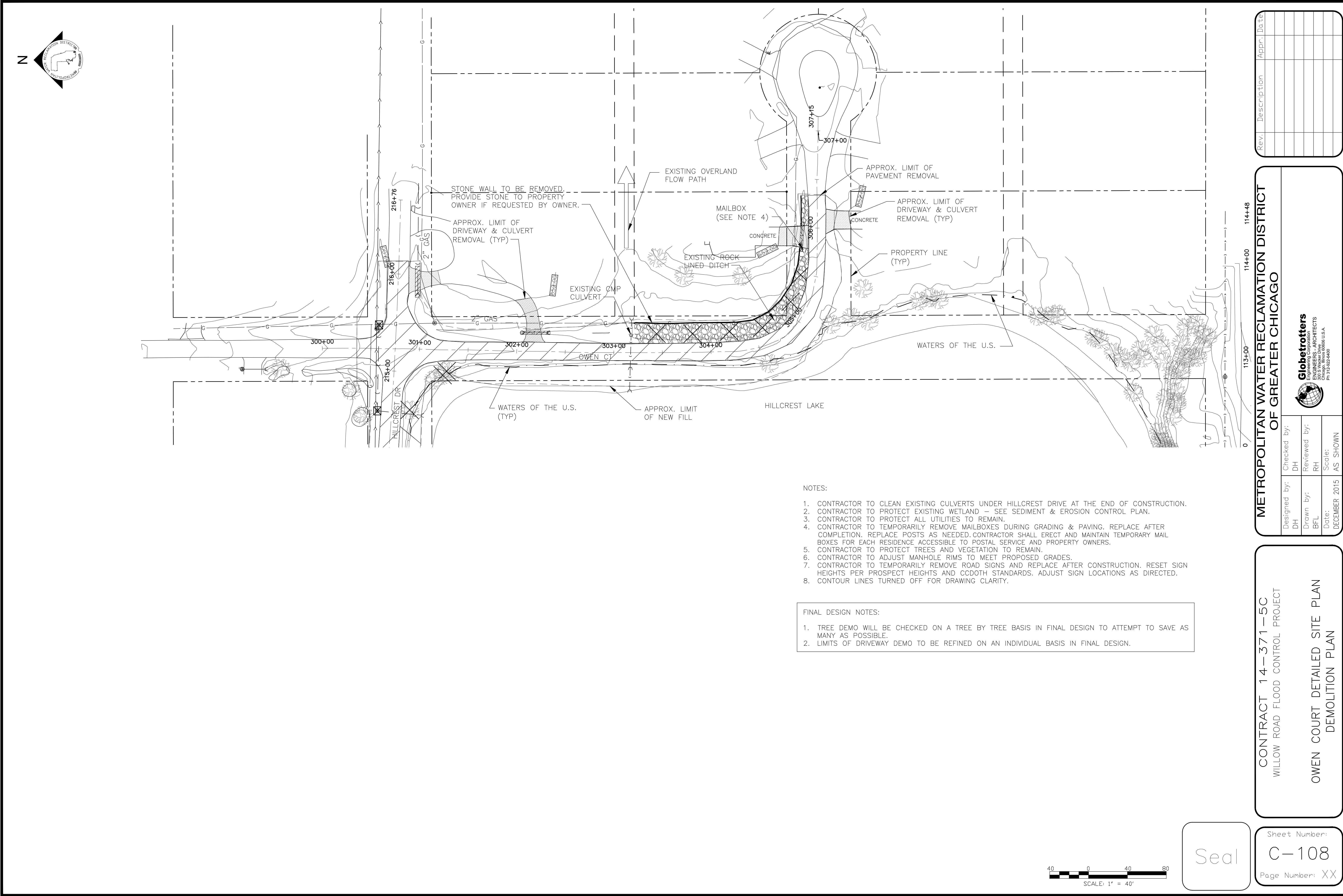
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HILLCREST DRIVE DETAILED SITE PLAN
DEMOLITION PLAN (SHEET 2 OF 2)

Sheet Number: C-107
Page Number: X

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- NOTES:
1. CONTRACTOR TO CLEAN EXISTING CULVERTS UNDER HILLCREST DRIVE AT THE END OF CONSTRUCTION.
 2. CONTRACTOR TO PROTECT EXISTING WETLAND - SEE SEDIMENT & EROSION CONTROL PLAN.
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 8. CONTOUR LINES TURNED OFF FOR DRAWING CLARITY.

- FINAL DESIGN NOTES:
1. TREE DEMO WILL BE CHECKED ON A TREE BY TREE BASIS IN FINAL DESIGN TO ATTEMPT TO SAVE AS MANY AS POSSIBLE.
 2. LIMITS OF DRIVEWAY DEMO TO BE REFINED ON AN INDIVIDUAL BASIS IN FINAL DESIGN.

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

OWEN COURT DETAILED SITE PLAN
DEMOLITION PLAN

Sheet Number:
C-108
Page Number: XX

Seal

Scale: 1" = 40'

DESIGNED BY: DH
DRAWN BY: BFL
DATE: DECEMBER 2015

CHECKED BY: DH
REVIEWED BY: RH
SCALE: AS SHOWN

DECEMBER 2015

REVISIONS

Rev.	Description	Appr.	Date

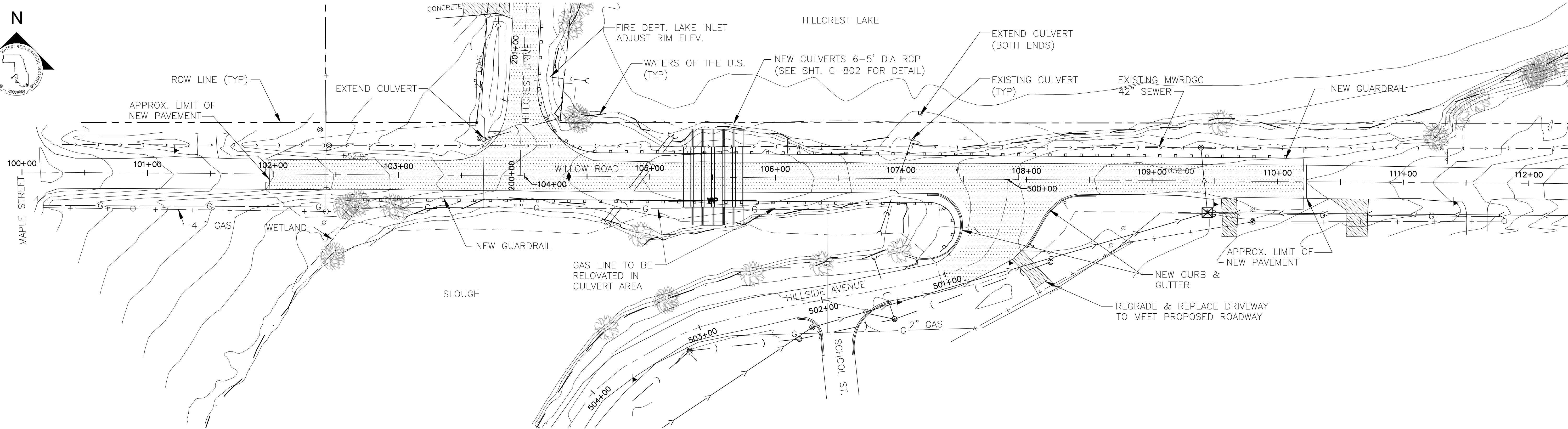
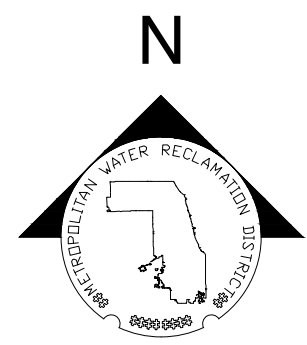
METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

Globetrotters
ENGINEERS - ARCHITECTS
Chicago, Illinois 60606 U.S.A.
Ph: 312-522-6400

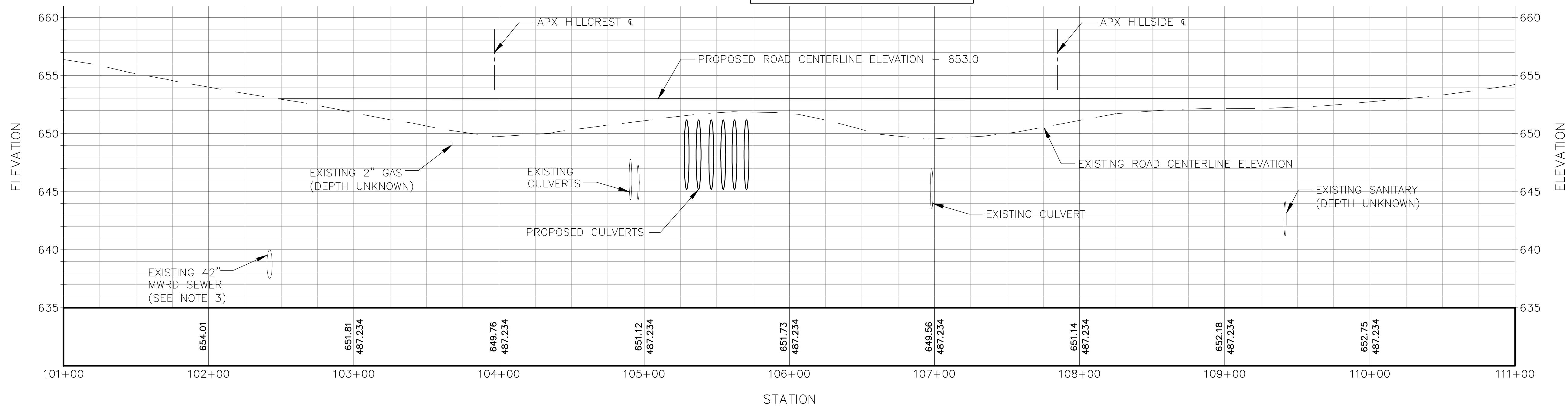
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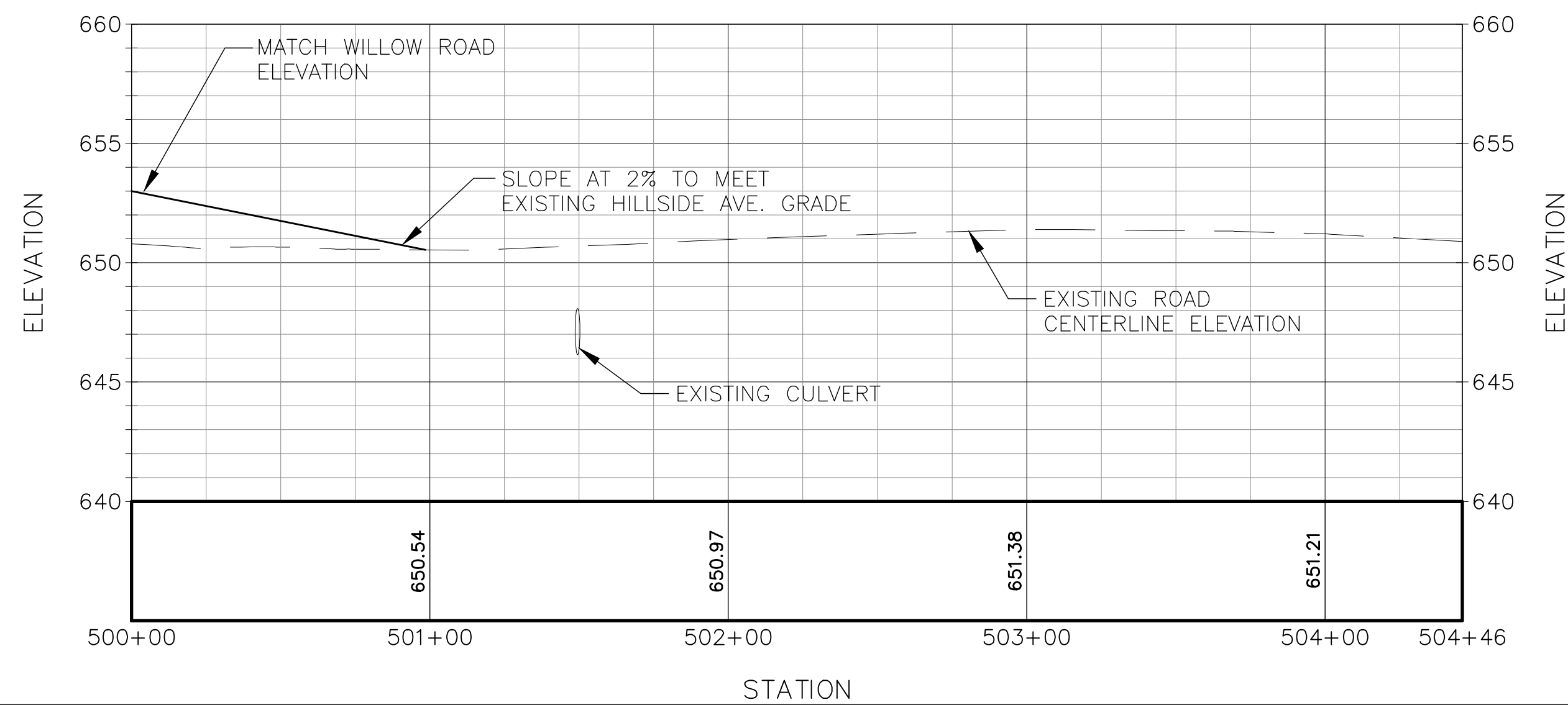
PLOT DATE: 9/8/2016 9:11 AM PLOTTED BY: BORIS LYALIN



Willow Road Profile



Hillside Avenue Profile



- NOTES:
- SEE SHEET C-806 FOR TYPICAL DRIVEWAY/DITCH TREATMENT.
 - DEMOLISHED TREES REMOVED FROM DRAWINGS (SEE DEMOLITION SHEETS).
 - MWRD SEWER ELEVATION IS APPROXIMATE BASED ON AS-BUILT DRAWINGS. SEE REFERENCE DRAWING. CONTRACTOR TO FIELD LOCATE AND PROTECT DURING CONSTRUCTION.
- FINAL DESIGN NOTES:
- INDIVIDUAL DRIVEWAY, CULVERT & DETAILS OF RESIDENTIAL GRADING/LANDSCAPING TO BE DEVELOPED IN FINAL DESIGN.
 - LANDSCAPE PLAN TO BE DEVELOPED IN FINAL DESIGN. CURRENT PLAN IS TO PLANT NATIVE SALT TOLERANT SPECIES IN FILL AREAS THAT ARE AT OR NEAR WATER LINE. OTHER AREAS WILL BE TOP SOIL & SEEDED. TREE REPLACEMENT NOT INCLUDED.
 - C&G TYPE, RADIUS & LIMITS TO BE REFINED IN FINAL DESIGN.
 - PAVEMENT CURVE RADIUS TO BE DEVELOPED IN FINAL DESIGN.
 - GUARDRAIL & TERMINAL TYPES & LIMITS TO BE REFINED IN FINAL DESIGN.
 - CULVERT UNDER WILLOW HILLCREST DRIVE, NORTH OF WILLOW ROAD MAY NEED TO BE REALIGNED DUE TO GRADING.

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO



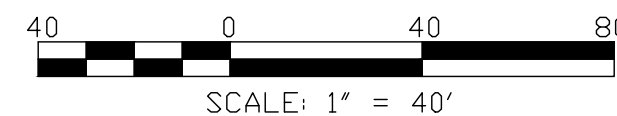
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Drawn by: BFL	Reviewed by: RH
Date: DECEMBER 2018	Scale: AS SHOWN

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

WILLOW RD ROADWAY PLAN AND PROFILE

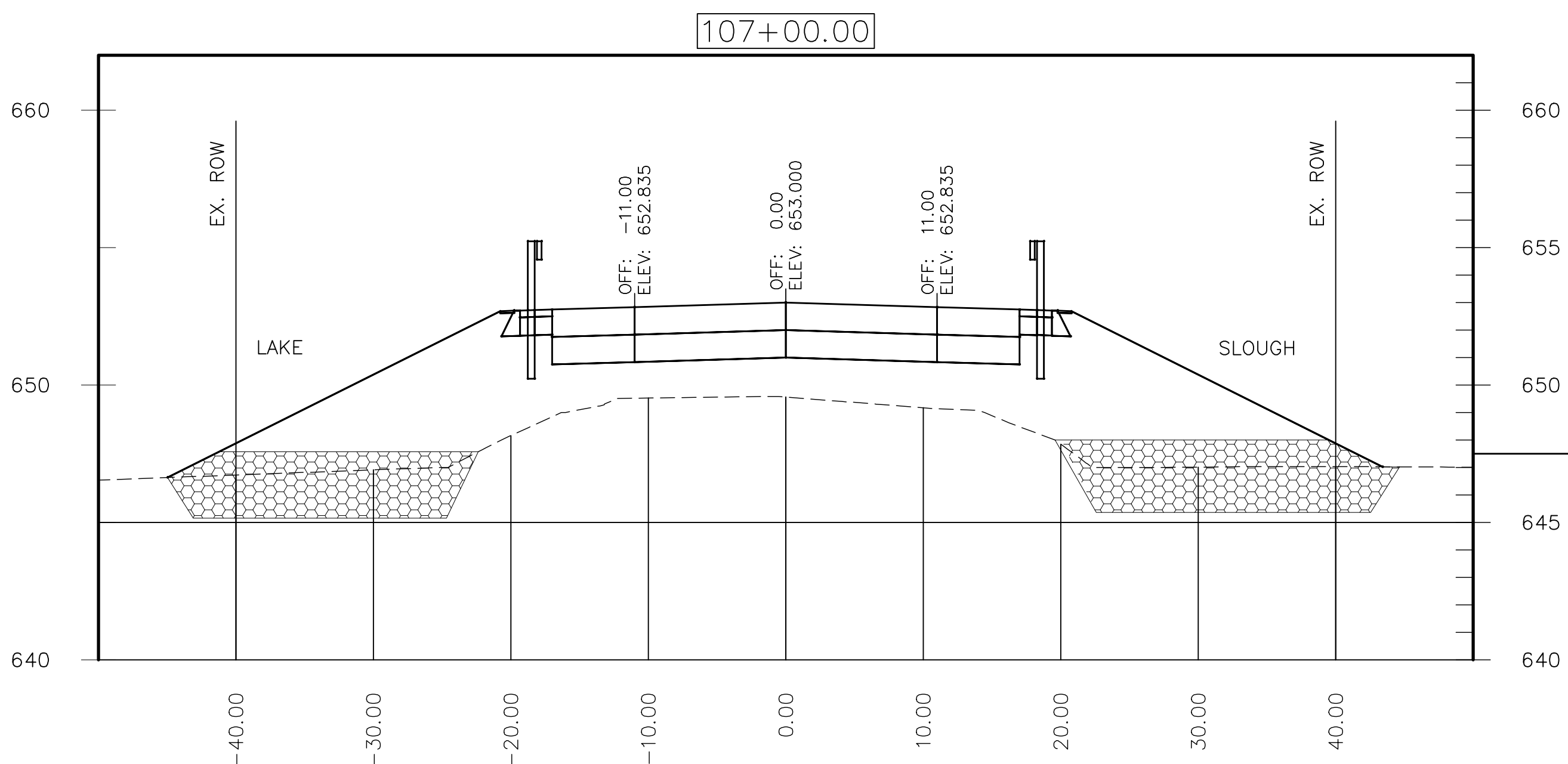
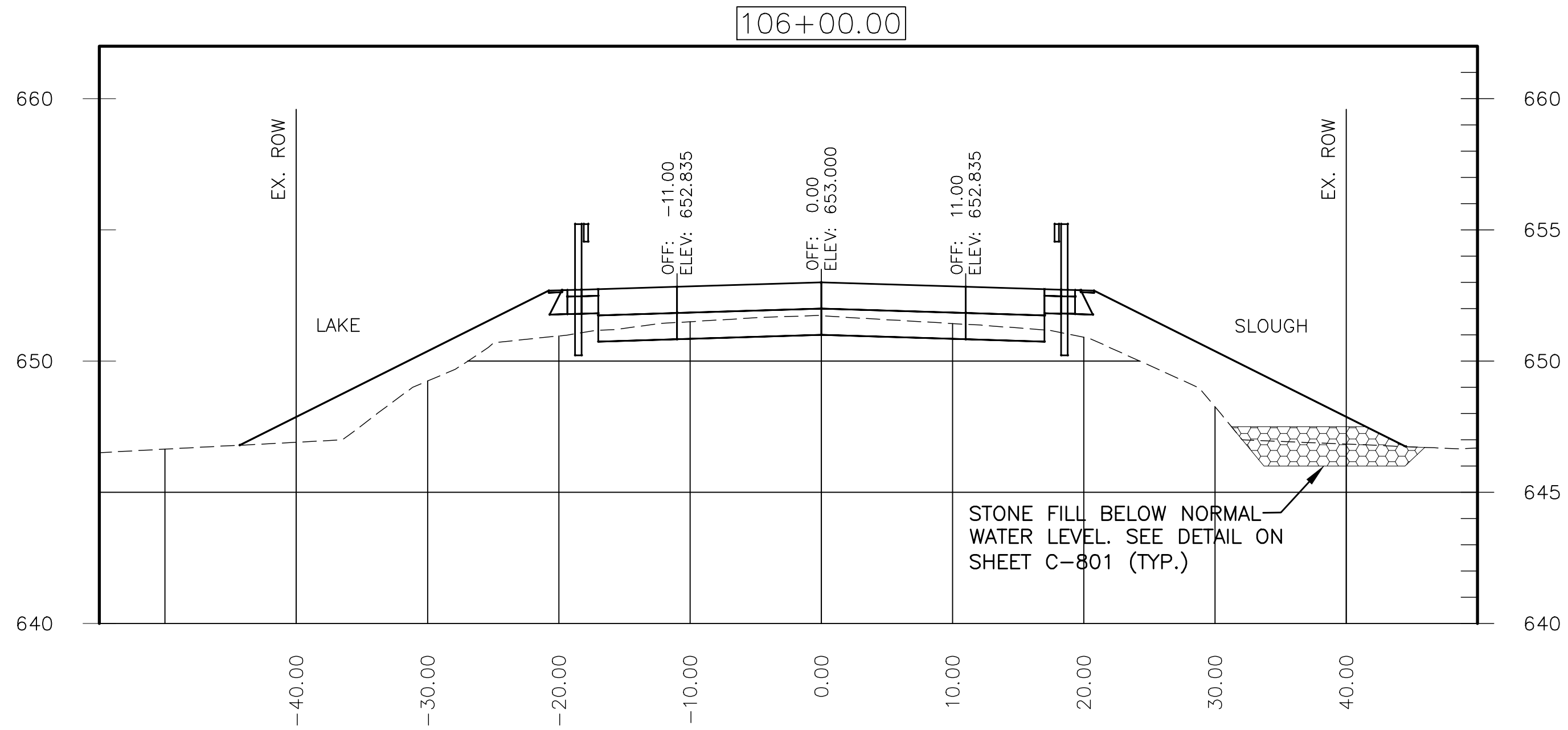
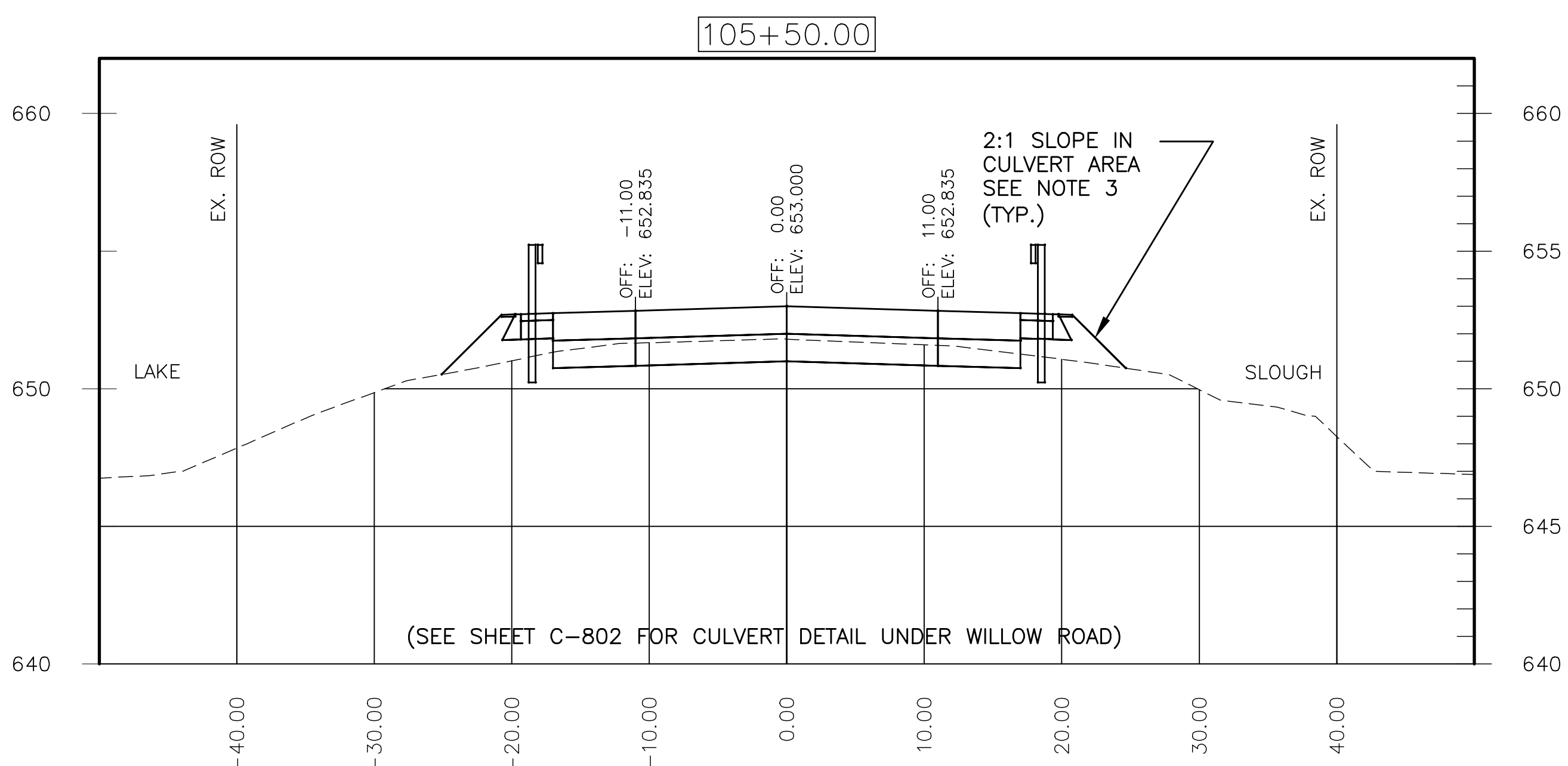
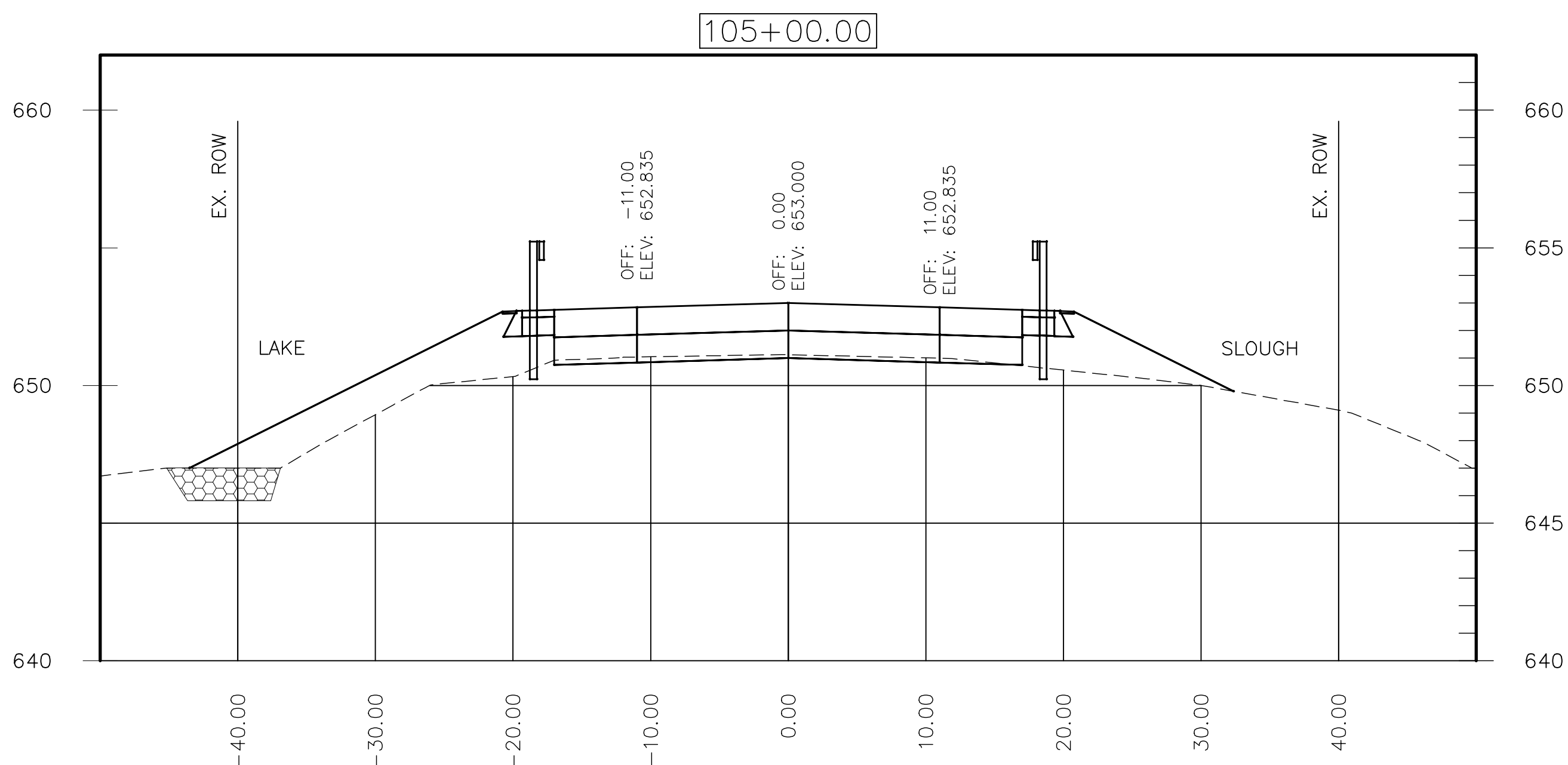
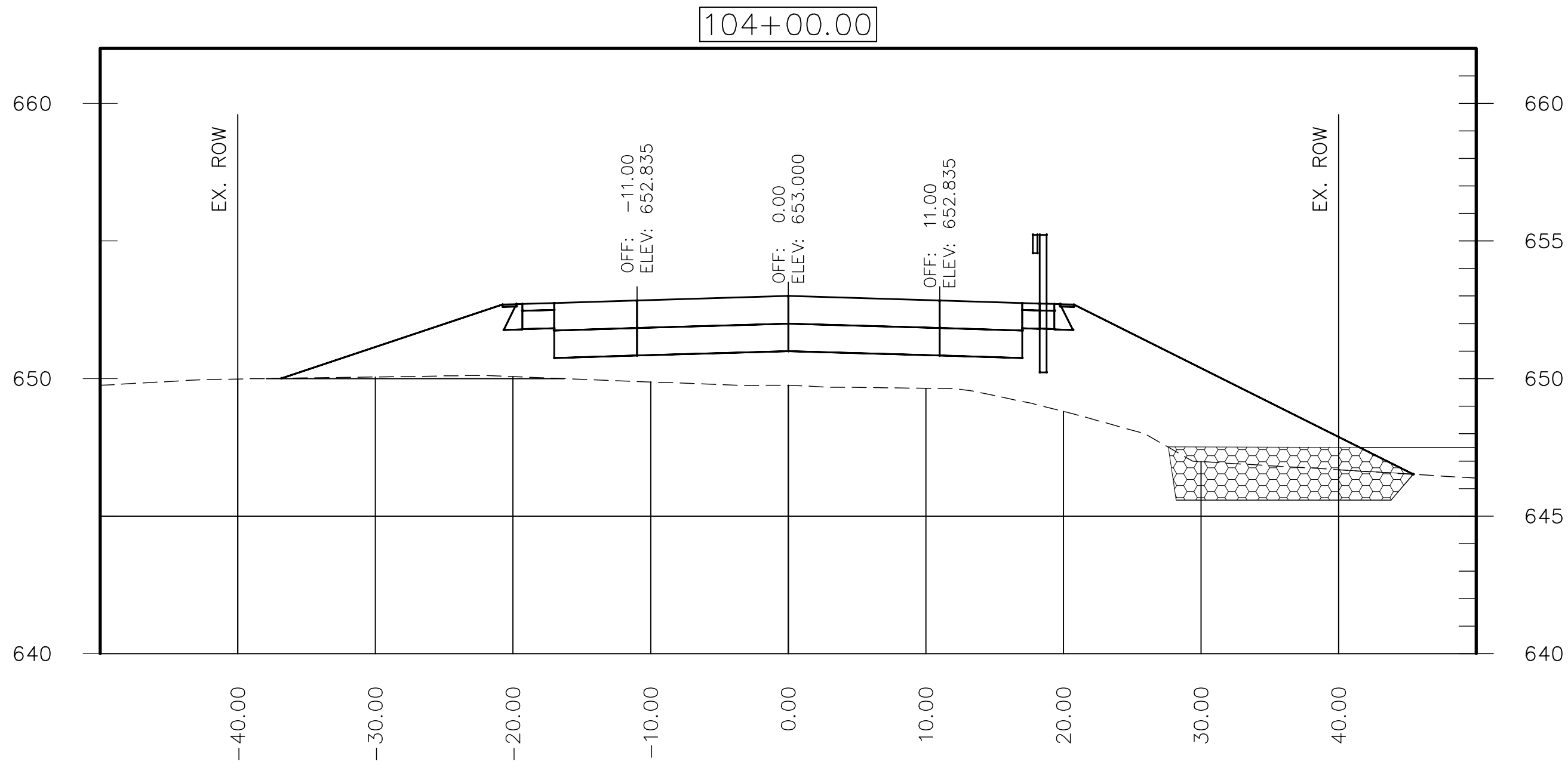
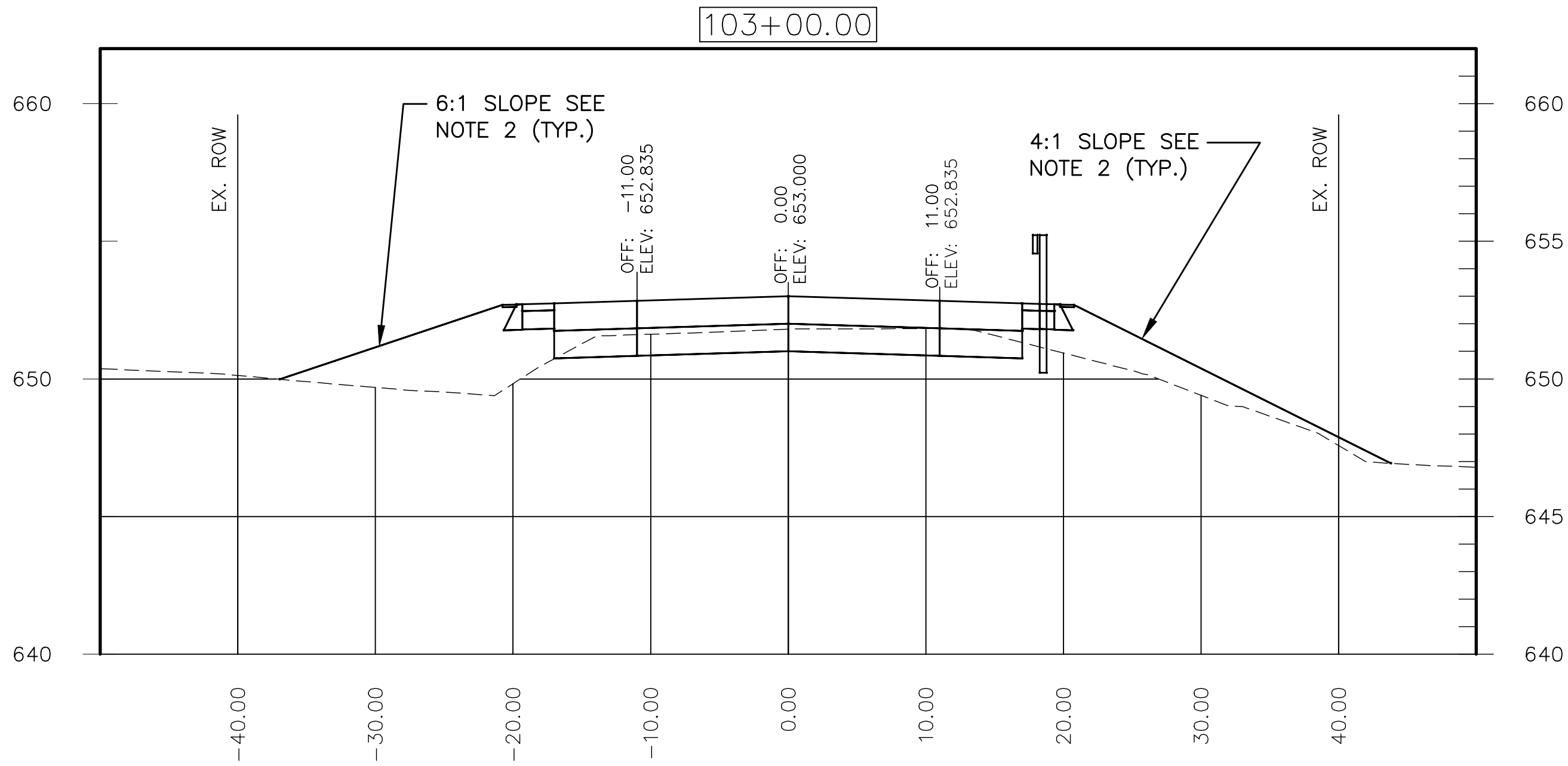
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C-201
Page Number: XX

Seal



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- NOTES:
1. UNDERGROUND UTILITIES NOT SHOWN - SEE PLAN VIEW
 2. EMBANKMENT SIDE SLOPES ARE 6:1 IN MOST AREAS.
SLOPES BEHIND GUARD RAILS ARE 4:1.
 3. SLOPES ARE 2:1 IN CULVERT AREA-SEE SHEET C802



ROAD AND SHOULDER SECTION - WILLOW RD

Seal

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

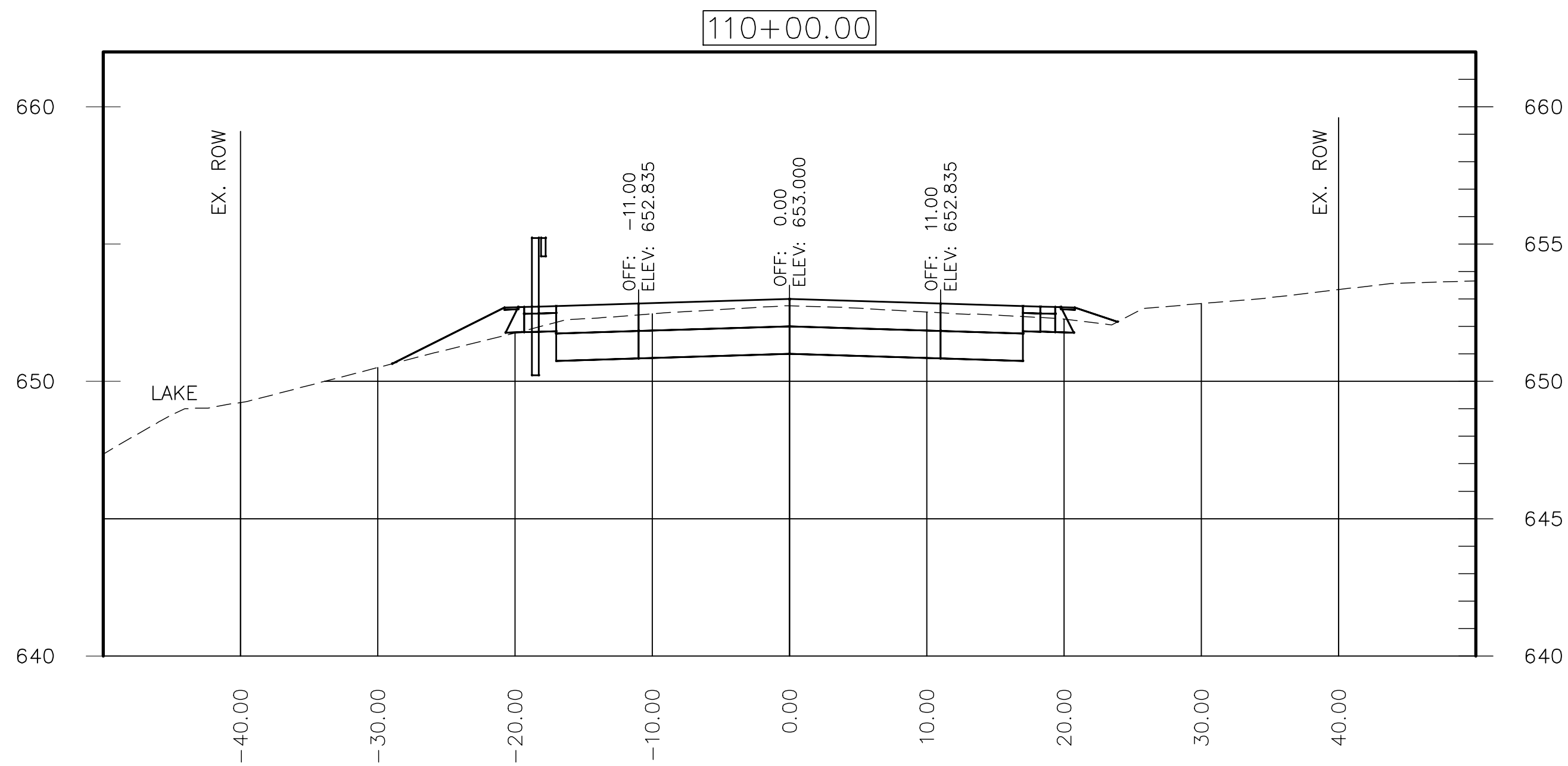


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DH	
Drawn by:	Reviewed by:
BFL	
Date:	Scale:
DECEMBER 2015	AS SHOWN

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

WILLOW RD ROADWAY SECTIONS
SHEET 1 OF 2

Sheet Number:
C-202
Page Number: XX



FINAL DESIGN NOTES:
1. DITCH GRADING ON LANDSIDE OF HILLCREST DRIVE TO BE DETAILED IN FINAL DESIGN.

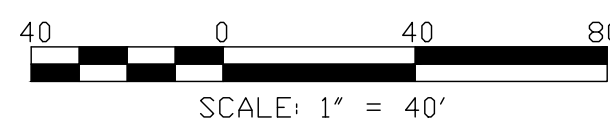
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Page Number: XX



FINAL DESIGN NOTES:

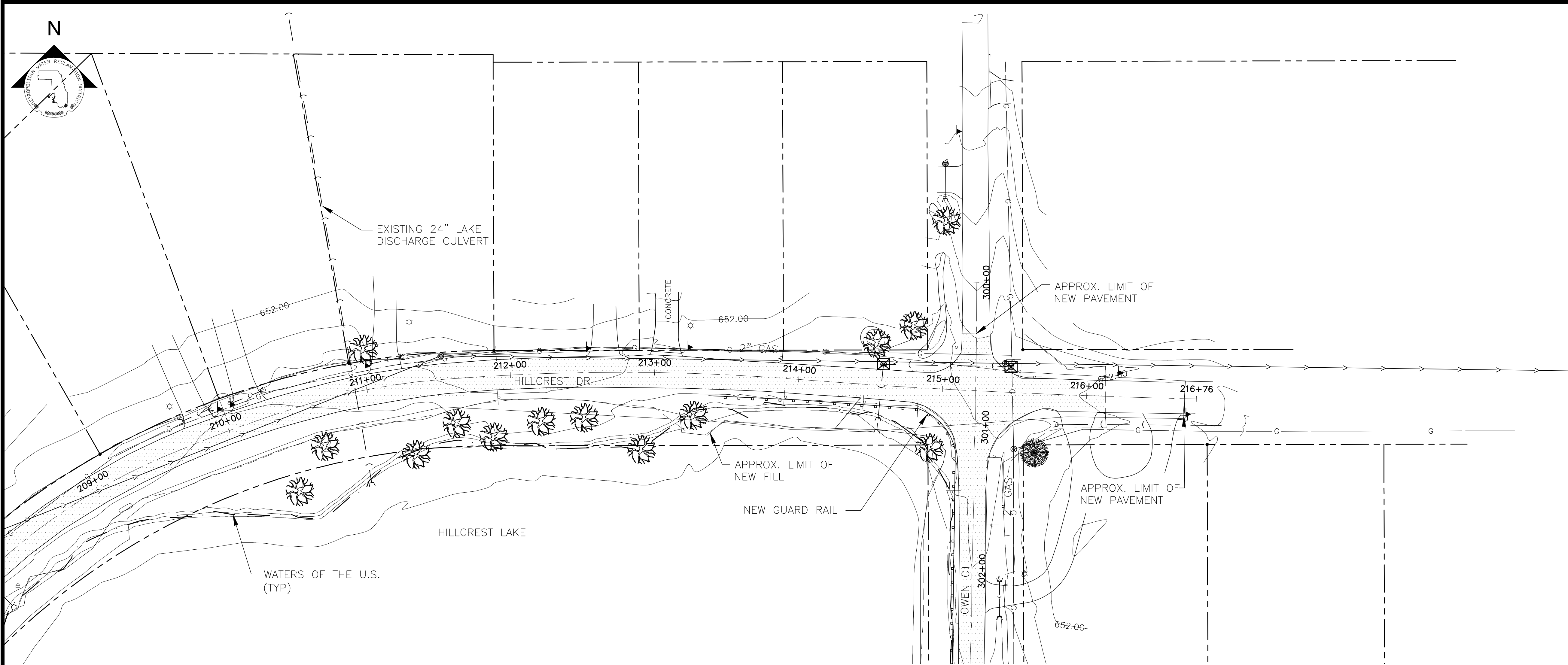
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2. LANDSCAPE PLAN TO BE DEVELOPED IN FINAL DESIGN. CURRENT PLAN IS TO PLANT NATIVE SALT TOLERANT SPECIES IN FILL AREAS THAT ARE AT OR NEAR WATER LINE. OTHER AREAS WILL BE TOP SOIL & SEEDED. TREE REPLACEMENT NOT INCLUDED.
3. C&G TYPE, RADIUS & LIMITS TO BE REFINED IN FINAL DESIGN.
4. PAVEMENT CURVE RADIUS TO BE DEVELOPED IN FINAL DESIGN.
5. GUARDRAIL & TERMINAL TYPES & LIMITS TO BE REFINED IN FINAL DESIGN.



Sheet Number: C-301
Page Number: XX

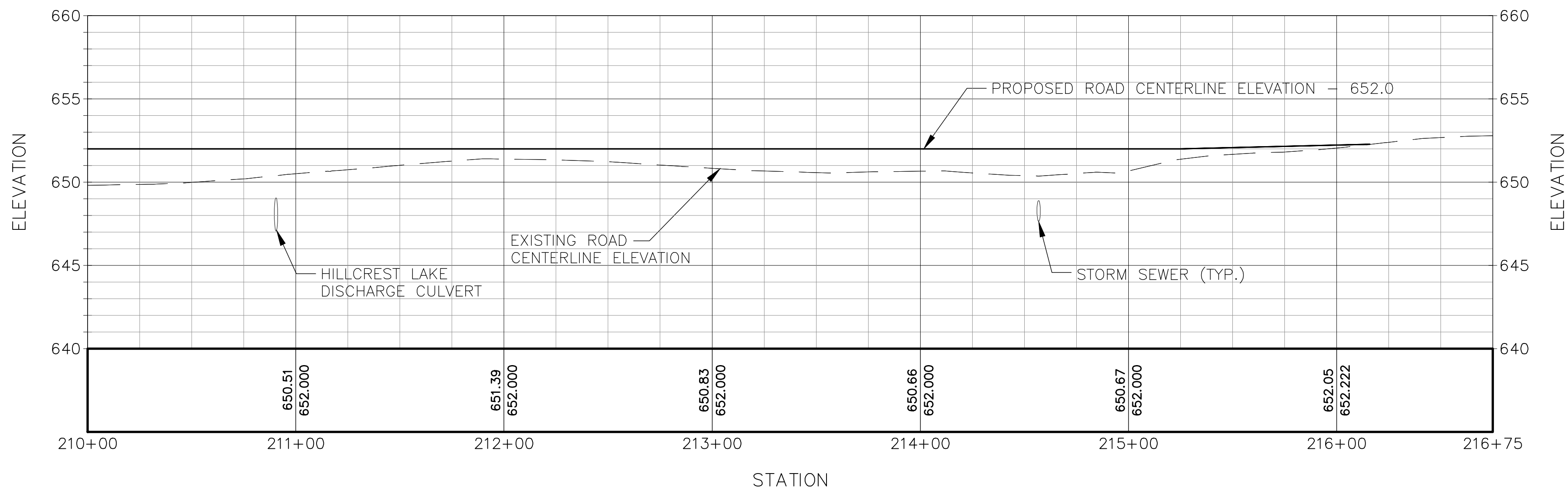
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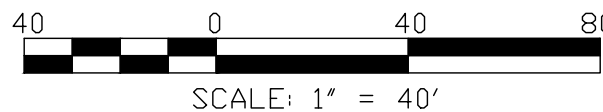
STATION

Hillcrest Drive Profile



- NOTES:
- SEE SHEET C-806 FOR TYPICAL DRIVEWAY/DITCH TREATMENT.
 - SEE SHEET C-401 FOR OWEN COURT PLAN & PROFILE.

- FINAL DESIGN NOTES:
- INDIVIDUAL DRIVEWAY, CULVERT & DETAILS OF RESIDENTIAL GRADING/LANDSCAPING TO BE DEVELOPED IN FINAL DESIGN.
 - LANDSCAPE PLAN TO BE DEVELOPED IN FINAL DESIGN. CURRENT PLAN IS TO PLANT NATIVE SALT TOLERANT SPECIES IN FILL AREAS THAT ARE AT OR NEAR WATER LINE. OTHER AREAS WILL BE TOP SOIL & SEEDED. TREE REPLACEMENT NOT INCLUDED.
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 - PAVEMENT CURVE RADIUS TO BE DEVELOPED IN FINAL DESIGN.
 - GUARDRAIL & TERMINAL TYPES & LIMITS TO BE REFINED IN FINAL DESIGN.



Seal

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

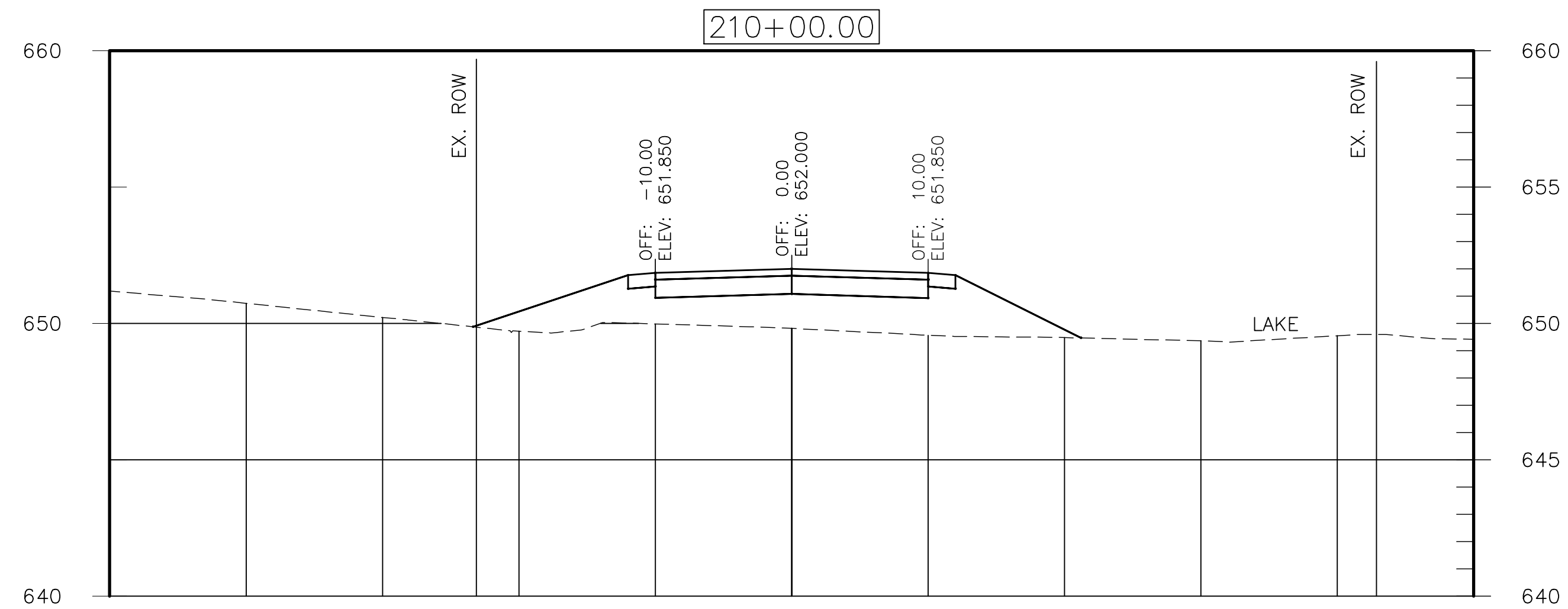
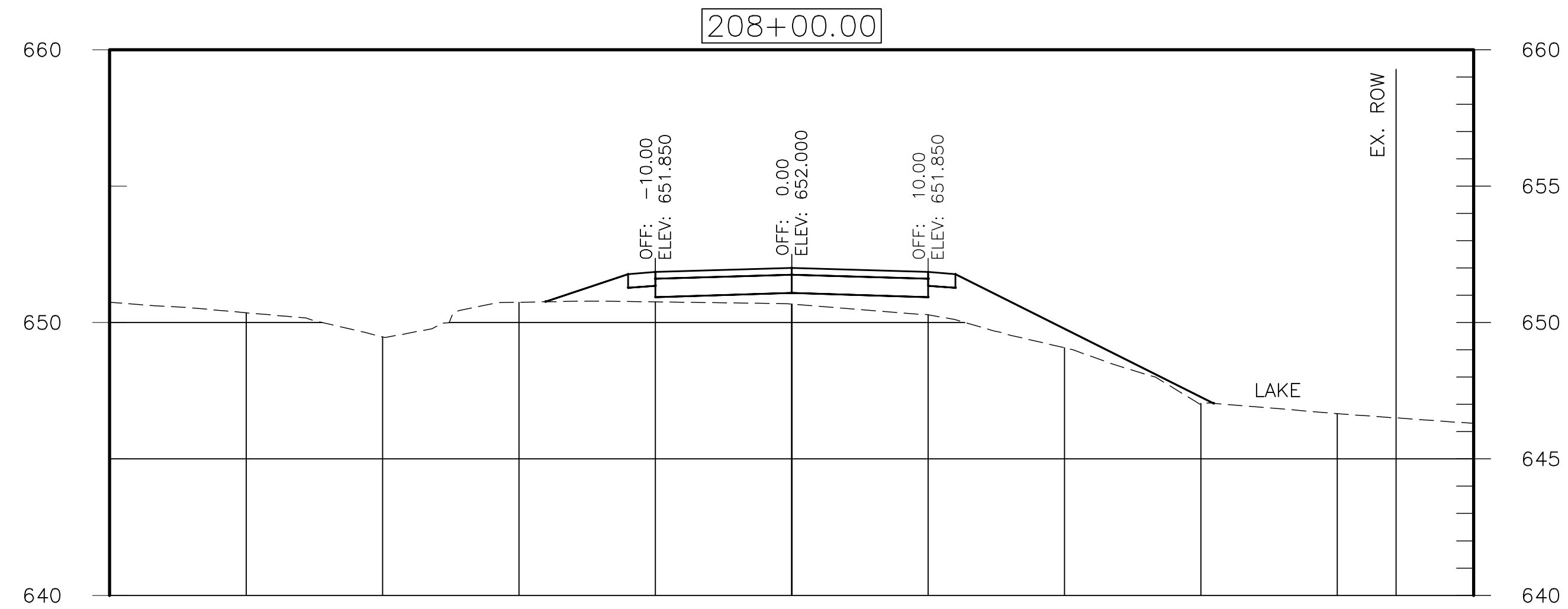
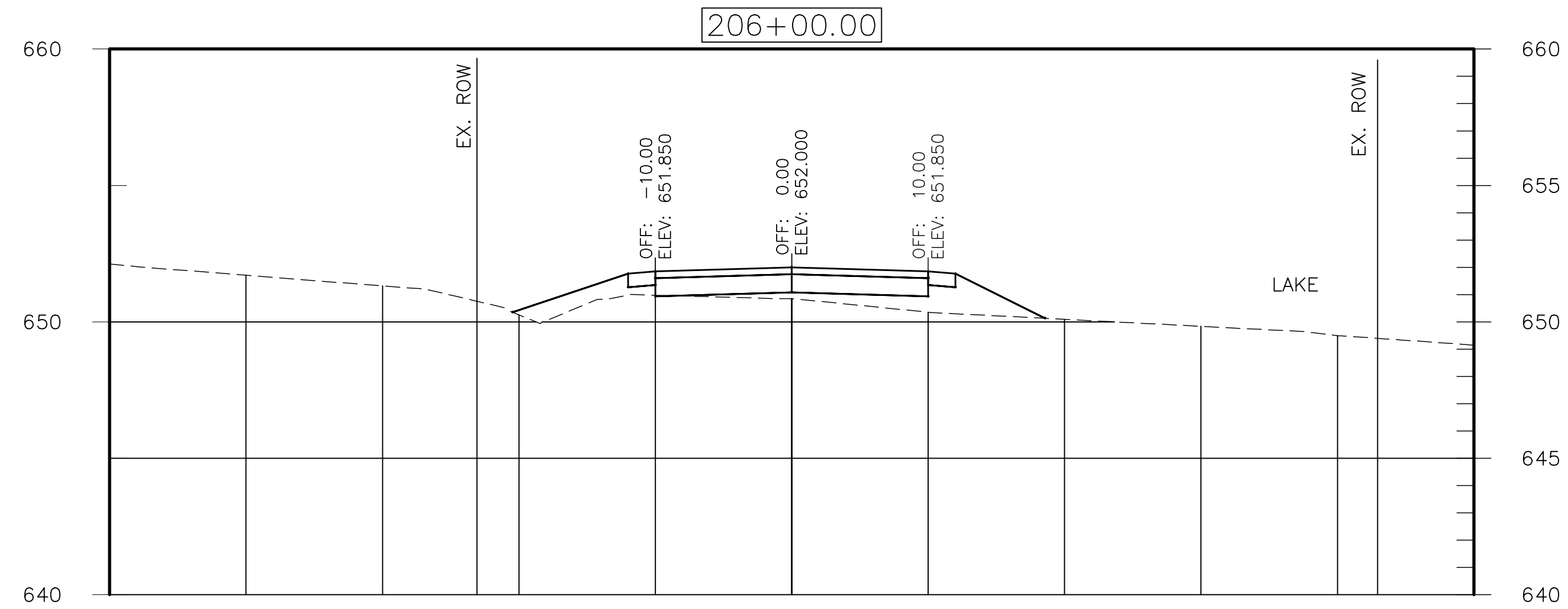
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Drawn by: BFL	Reviewed by: RH
Date: DECEMBER 2015	Scale: AS SHOWN



CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

HILLCREST DRIVE PLAN AND PROFILE
SHEET 2 OF 2

Sheet Number:
C-302
Page Number: XX



FINAL DESIGN NOTES:
1. DITCH GRADING ON LANDSIDE OF HILLCREST DRIVE TO
BE DETAILED IN FINAL DESIGN.

10 0 10 20

SCALE: 1" = 10'

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**



Globetrotters
Engineering Corporation
ENGINEERS - ARCHITECTS
300 S Wacker Drive
Chicago, Illinois 60606 U.S.A.
Ph 312-922-6400

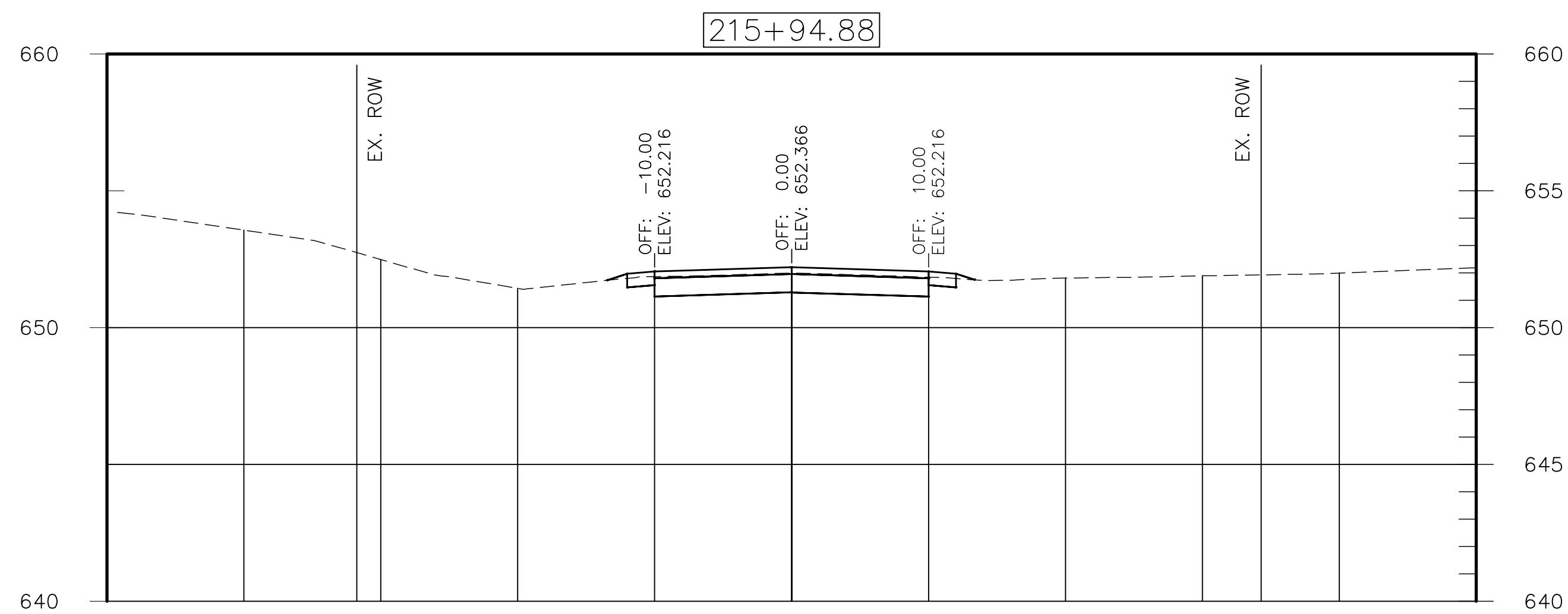
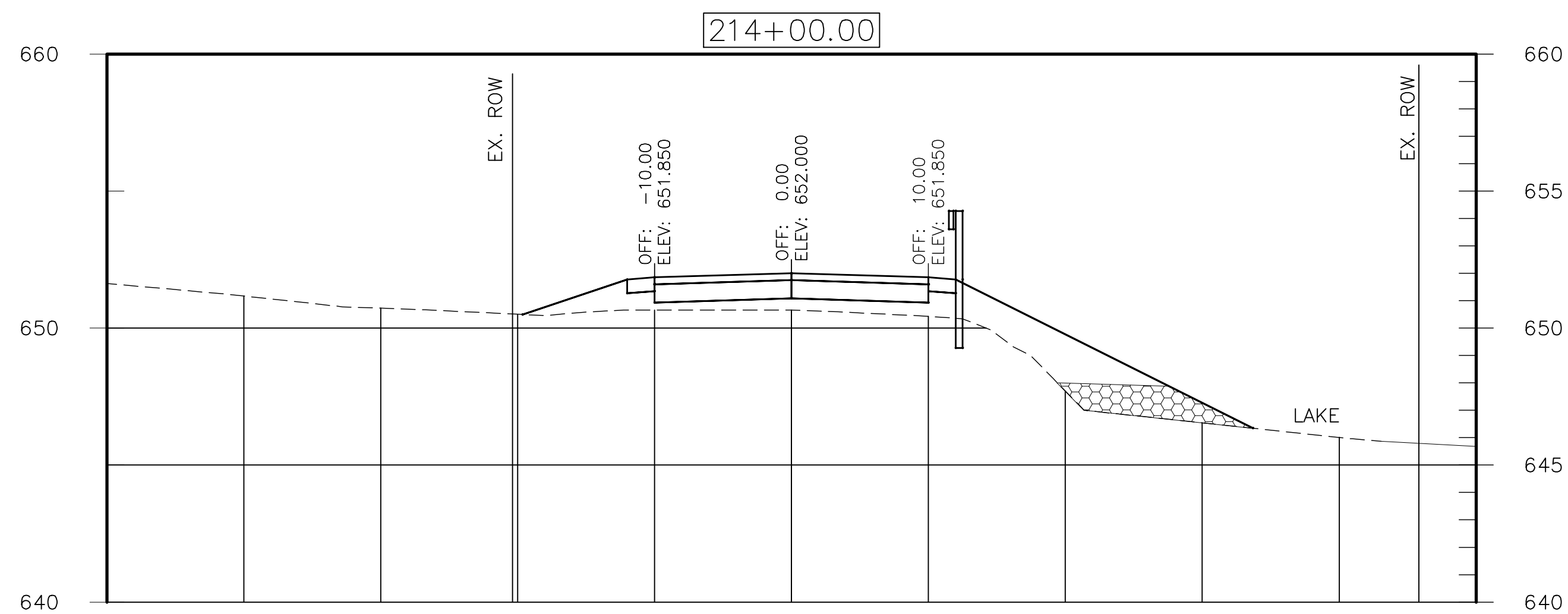
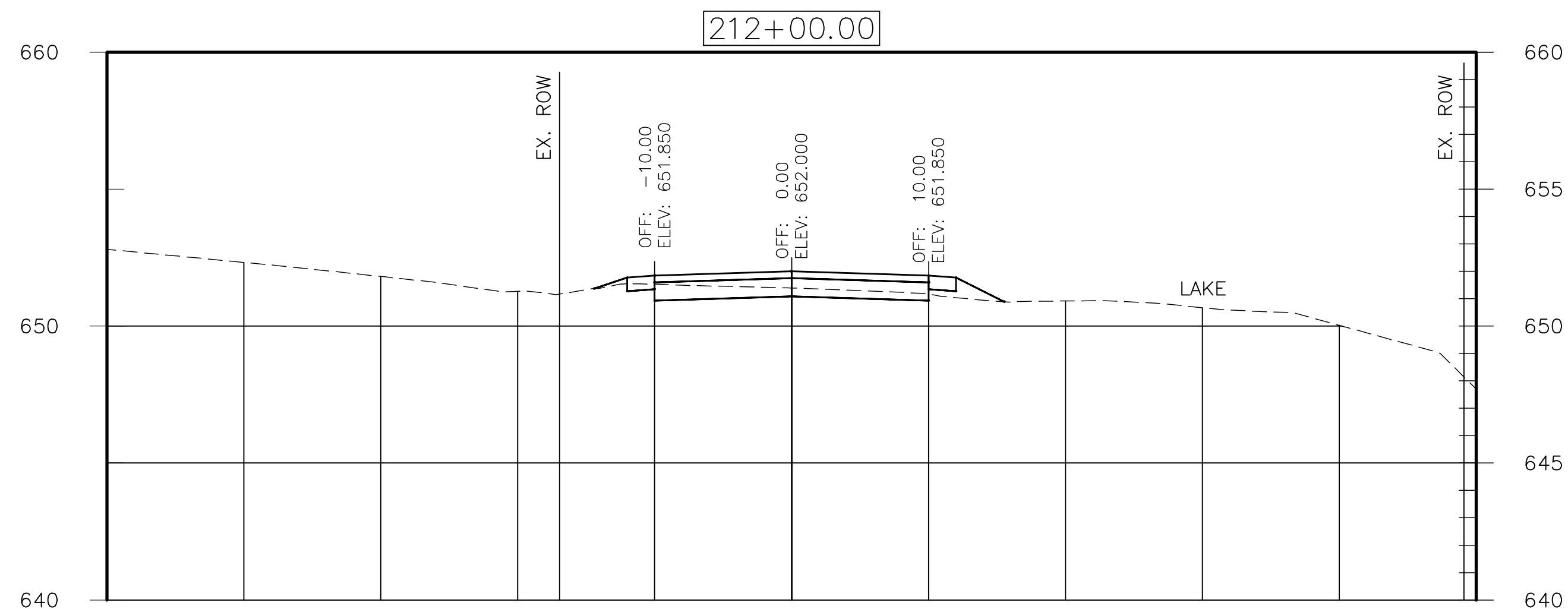
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Drawn by: BFL	Reviewed by: RH
Date: DECEMBER 2015	Scale: AS SHOWN

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

HILLCREST DR ROADWAY SECTIONS
SHEET 1 OF 2

Sheet Number:
C-303
Page Number: XX

[illegible]



NOTES:

1. UNDERGROUND UTILITIES NOT SHOWN - SEE PLAN VIEW
2. EMBANKMENT SIDE SLOPES ARE 6:1 IN MOST AREAS.
SLOPES BEHIND GUARD RAILS ARE 4:1.

FINAL DESIGN NOTES:
1. DITCH GRADING ON LANDSIDE OF HILLCREST DRIVE TO
BE DETAILED IN FINAL DESIGN.

10 0 10 20
SCALE: 1" = 10'

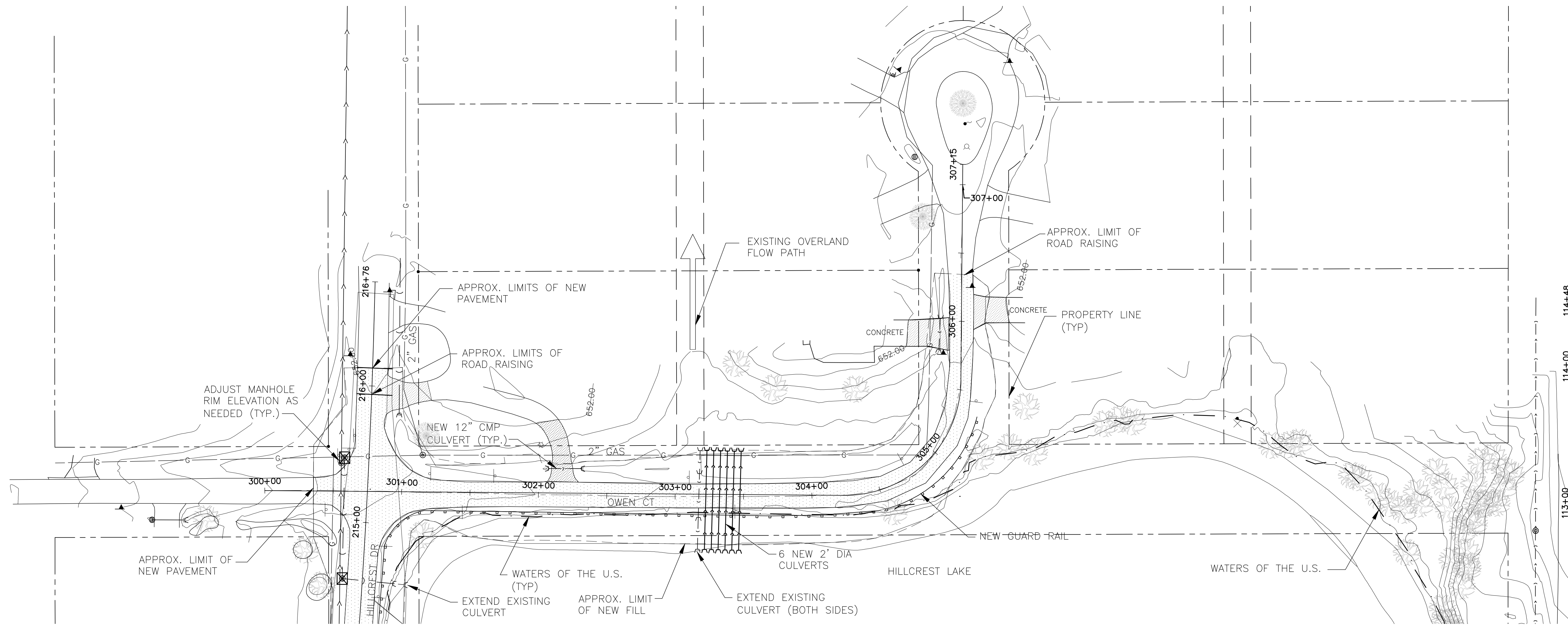
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**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

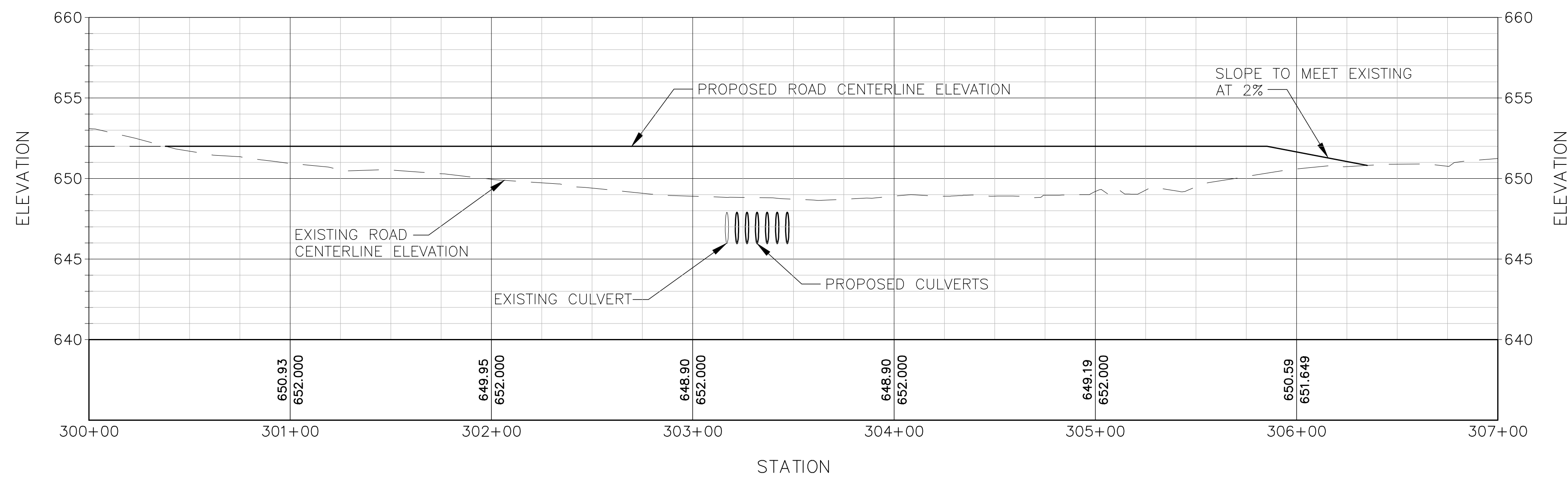
CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

HILLCREST DR ROADWAY SECTIONS
SHEET 2 OF 2

Sheet Number:
C-304
Page Number: XX



Owen Court Profile



1. SEE SHEET C-806 FOR TYPICAL DRIVEWAY/DITCH TREATMENT.
2. SEE SHEET C-301 & C-302 FOR HILLCREST DR. PLAN & PROFILE.

1. INDIVIDUAL DRIVEWAY, CULVERT & DETAILS OF RESIDENTIAL GRADING/LANDSCAPING TO BE DEVELOPED IN FINAL DESIGN.
2. LANDSCAPE PLAN TO BE DEVELOPED IN FINAL DESIGN. CURRENT PLAN IS TO PLANT NATIVE SALT TOLERANT SPECIES IN FILL AREAS THAT ARE AT OR NEAR WATER LINE. OTHER AREAS WILL BE TOP SOIL & SEEDED. TREE REPLACEMENT NOT INCLUDED.
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4. PAVEMENT CURVE RADIUS TO BE DEVELOPED IN FINAL DESIGN.
5. GUARDRAIL & TERMINAL TYPES & LIMITS TO BE REFINED IN FINAL DESIGN.

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**



Globetrotters
Engineering Corporation
ENGINEERS - ARCHITECTS
300 S Wacker Drive
Chicago, Illinois 60606 U.S.A.
Ph 312-922-6400

Designed by: DH	Checked by: DH
Drawn by: BFL	Reviewed by: RH
Date: DECEMBER 2015	Scale: AS SHOWN

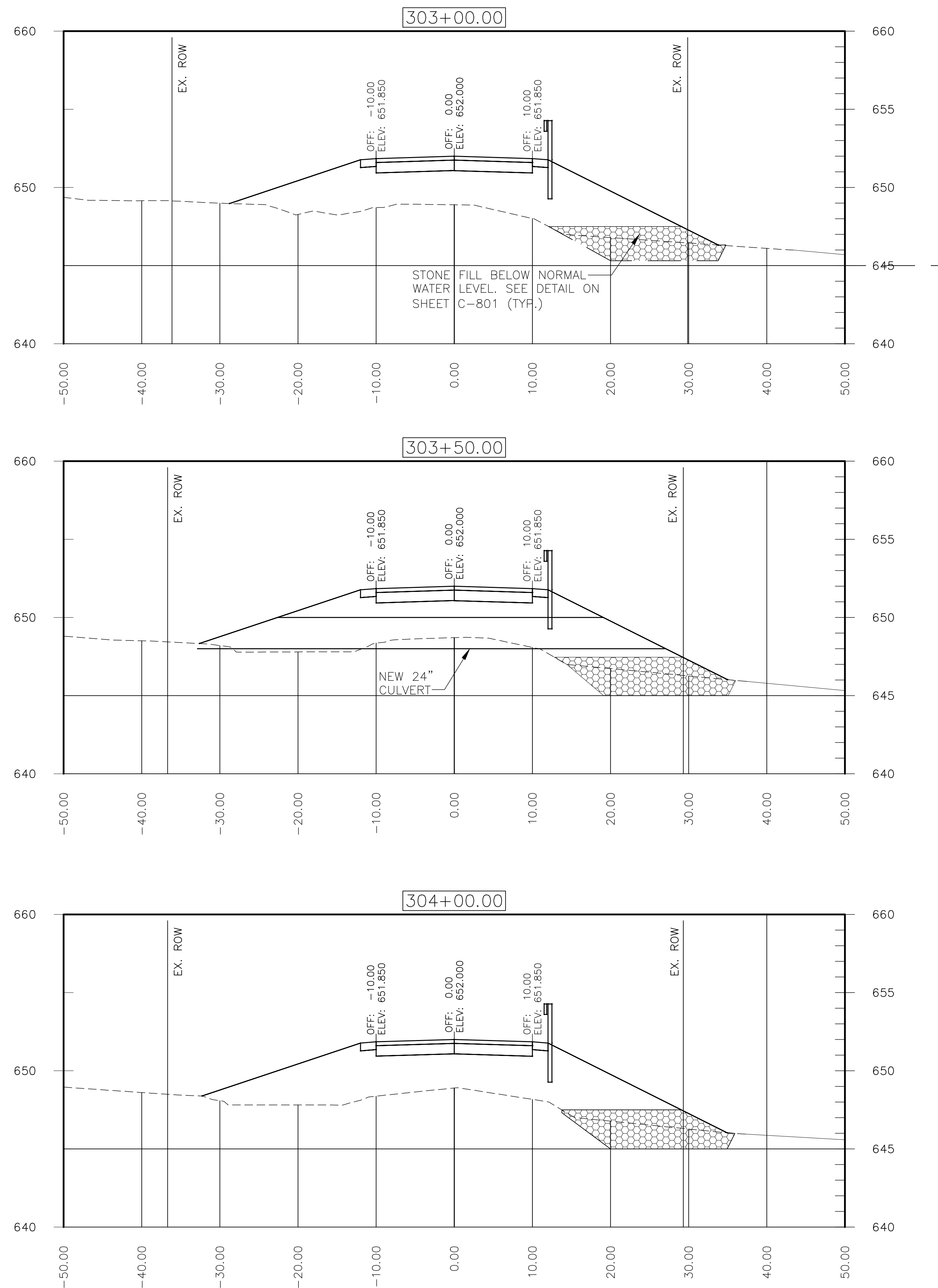
CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

OWEN COURT PLAN AND PROFILE

Sheet Number:
C-401
Page Number: XX

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FINAL DESIGN NOTES:
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BE DETAILED IN FINAL DESIGN.

Seal

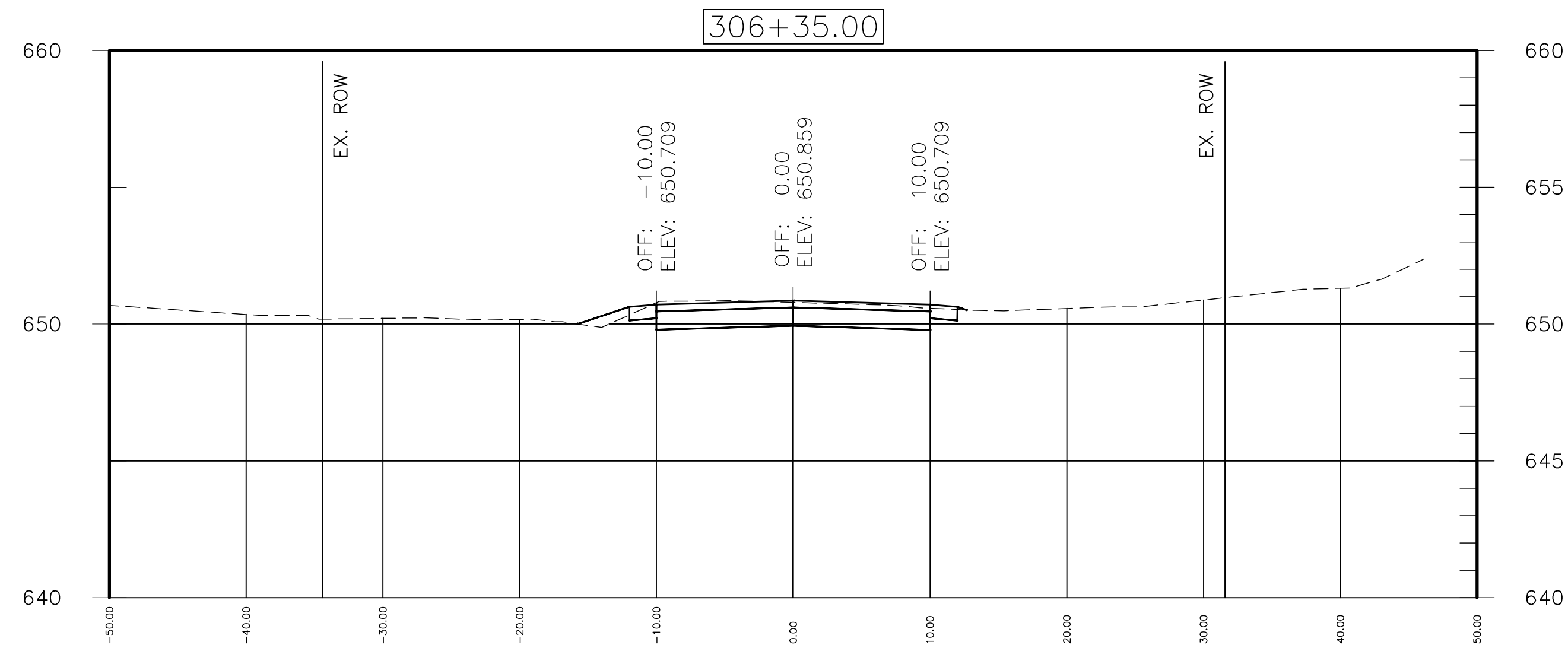
OWEN COURT ROADWAY SECTIONS
SHEET 1 OF 2

 **Globetrotters**
Engineering Corporation
ENGINEERS - ARCHITECTS
Chicago, Illinois U.S.A.
Ph 312-622-5400



Globetrotters
Engineering Corporation
ENGINEERS - ARCHITECTS
300 S Wacker Drive
Chicago, Illinois 60606 U.S.A.
Ph 312-922-6400

[illegible]



FINAL DESIGN NOTES:
1. DITCH GRADING ON LANDSIDE OF OWEN COURT TO BE
DETAILED IN FINAL DESIGN.

Seal



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ENGINEERS - ARCHITECTS
300 S Wacker Drive
Chicago, Illinois 60606 U.S.A.
Ph 312-922-6400

OWEN COURT ROADWAY SECTIONS
SHEET 2 OF 2

Sheet Number:
C-403
Page Number: X

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METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

Designed by: DH	Checked by: DH
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Date: DECEMBER 2015	Scale: AS SHOWN



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300 S Wacker Drive
Chicago, Illinois 60606 U.S.A.
Ph 312-922-6400

CONTRACT14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

STORAGE BASIN
AREA 1 – WILLOW ROAD AREA

Sheet Number:
C-501
Page Number: XX

Seal



CONTRACT14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

STORAGE BASIN
AREA 2 - ELM STREET AREA

Sheet Number:
C-502

Page Number: XX

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DRAWN BY: BFL
DATE: DECEMBER 2015

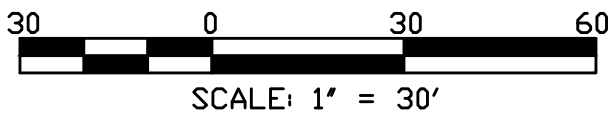
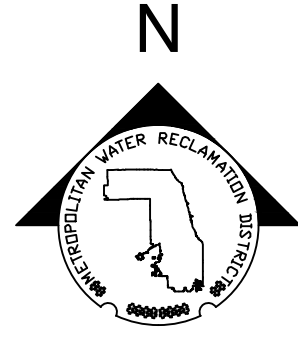
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Globetrotters
ENGINEERS - ARCHITECTS
CHICAGO, ILLINOIS 60606 U.S.A.
PH 312-622-6400

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

Rev.	Description	Appr.	Date

Seal



Seal

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

STORAGE BASIN
AREA 3 - CONFLUENCE

Designed by:
DH

Checked by:
DH

Drawn by:
JMA

Reviewed by:
RH

Date:
JULY 2015

Scale:
AS SHOWN

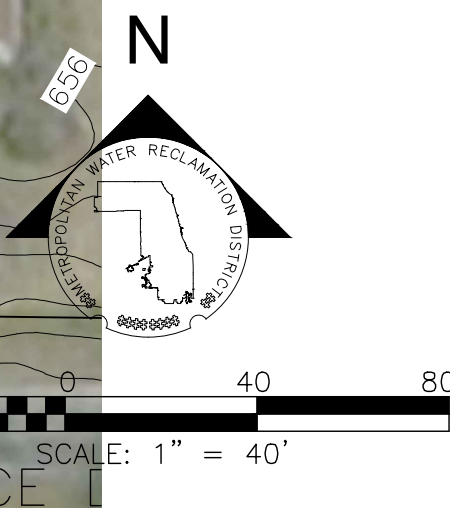
**Globetrotters**
Engineering Corporation
100 N. LAKE STREET, SUITE 200
CHICAGO, ILLINOIS 60606 U.S.A.
PH: 312-467-6900

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

Rev.	Description	Appr.	Date

Sheet Number:
C-503

Page Number: XX

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METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO



Designed by: DH	Checked by: DH
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Date: JUNE 2016	Scale: AS SHOWN


CONTRACT14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

STORAGE BASIN AREA 4
CONFLUENCE NORTH-OPTION 1

Sheet Number:
C-504A
Page Number: XX

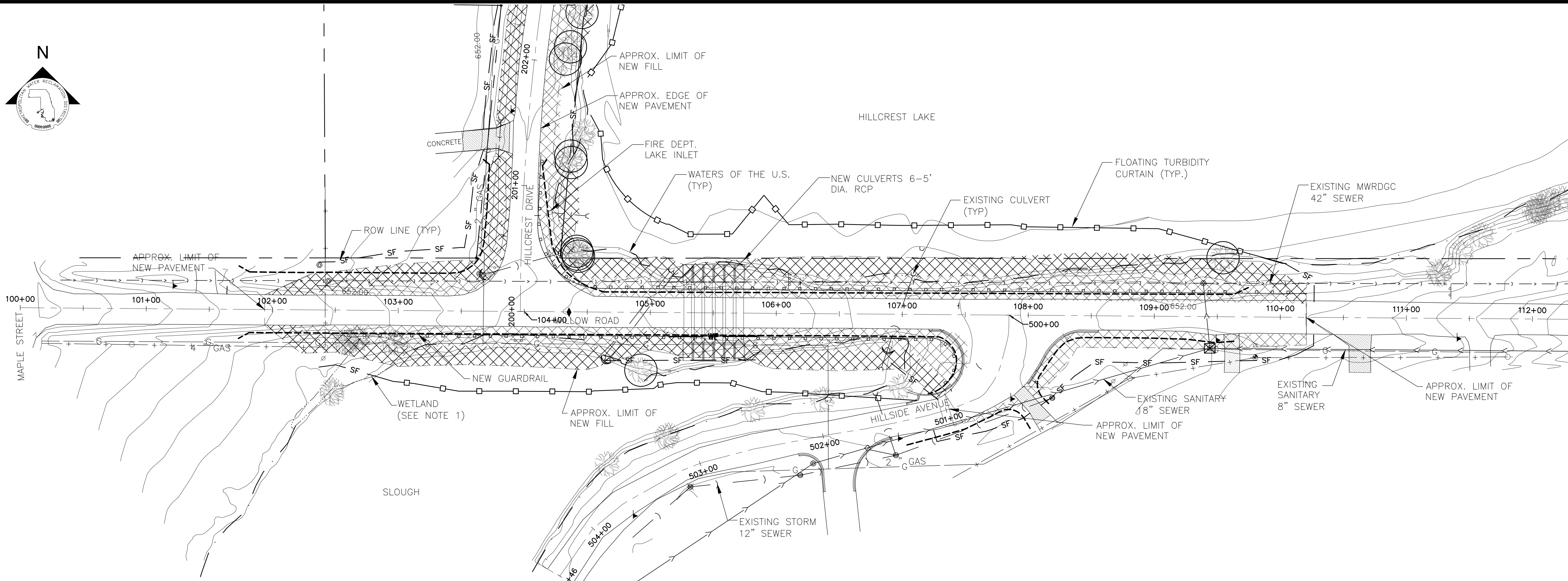
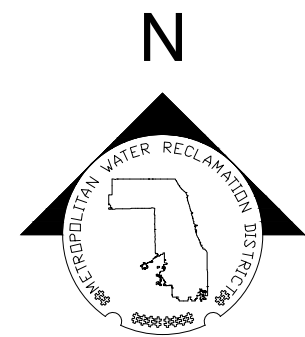
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CONTRACT 14-371-5C WILLOW ROAD FLOOD CONTROL PROJECT STORAGE BASIN AREA-4 CONFLUENCE NORTH-OPTION 2		Sheet Number: <h1 style="margin: 0;">C-504B</h1> Page Number: XX																									
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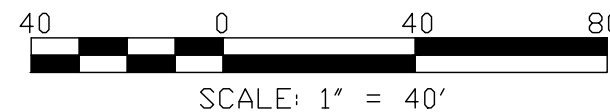
PLOT DATE: 9/7/2016 11:30 AM PLOTTED BY: BORIS LYALIN



- NOTES
1. CONTRACTOR SHALL MARK AND PROTECT WETLAND BY ERECTING AND MAINTAINING 4' HIGH ORANGE SNOW FENCE 5' BEYOND THE DELINEATED WETLAND LIMIT.

- FINAL DESIGN NOTES
1. TYPICAL DETAILS TO BE ADDED PER ILLINOIS URBAN MANUAL AND/OR LOCAL STANDARDS.
 2. EROSION CONTROL PLAN NOTES TO BE ADDED.
 3. E.C. PLANS TO BE DEVELOPED FOR COMPUTE STORAGE AREAS.

- | | |
|--|----------------------------|
| | CULVERT INLET PROTECTION |
| | INLET PROTECTION |
| | SILT FENCE |
| | FLOATING TURBIDITY CURTAIN |
| | EROSION CONTROL BLANKET |
| | TREE PROTECTION |



SCALE: 1" = 40'

Seal

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

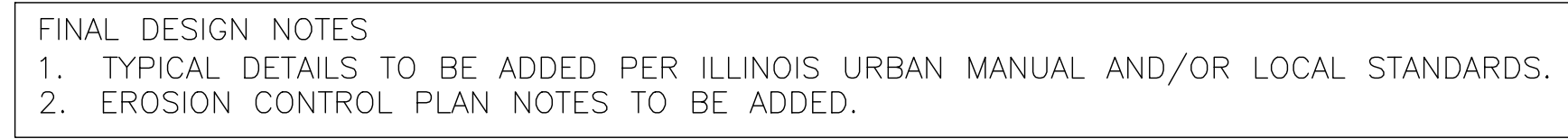
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WILLOW ROAD






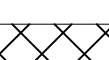
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Drawn by: JMA	Reviewed by: RH
Date: JULY 2015	Scale: AS SHOWN



Rev.	Description	Appr.	Date

Sheet Number:
C-601
Page Number: XX




- | | |
|---|----------------------------|
|  | CULVERT INLET PROTECTION |
|  | INLET PROTECTION |
|  | SILT FENCE |
|  | FLOATING TURBIDITY CURTAIN |
|  | EROSION CONTROL BLANKET |
|  | TREE PROTECTION |



Seal

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

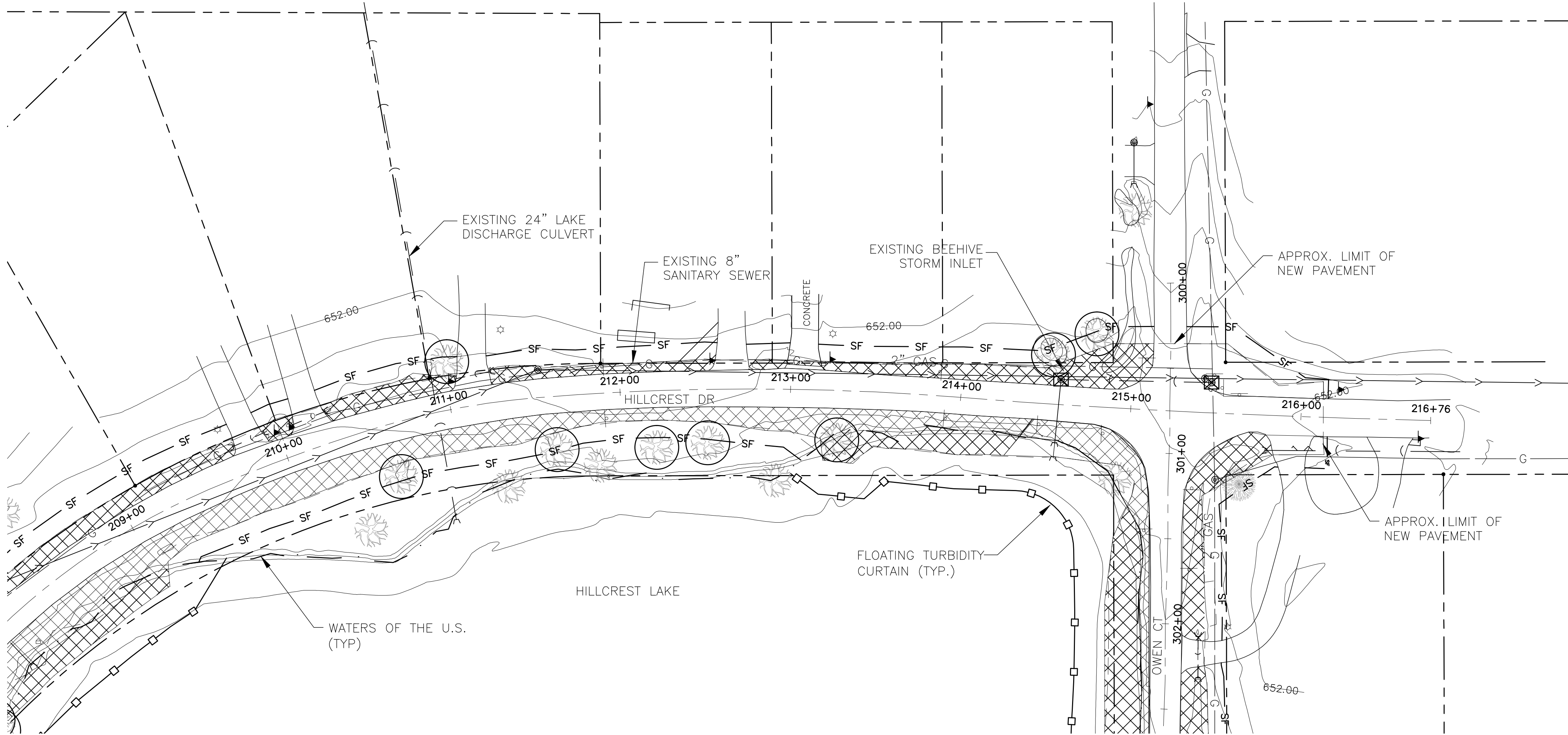
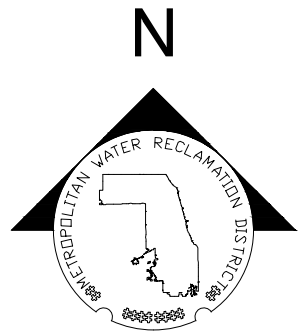
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Date: JULY 2015	Scale: AS SHOWN	

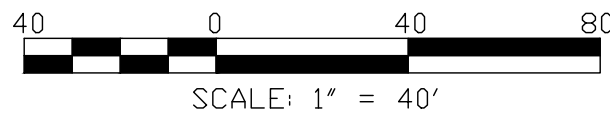
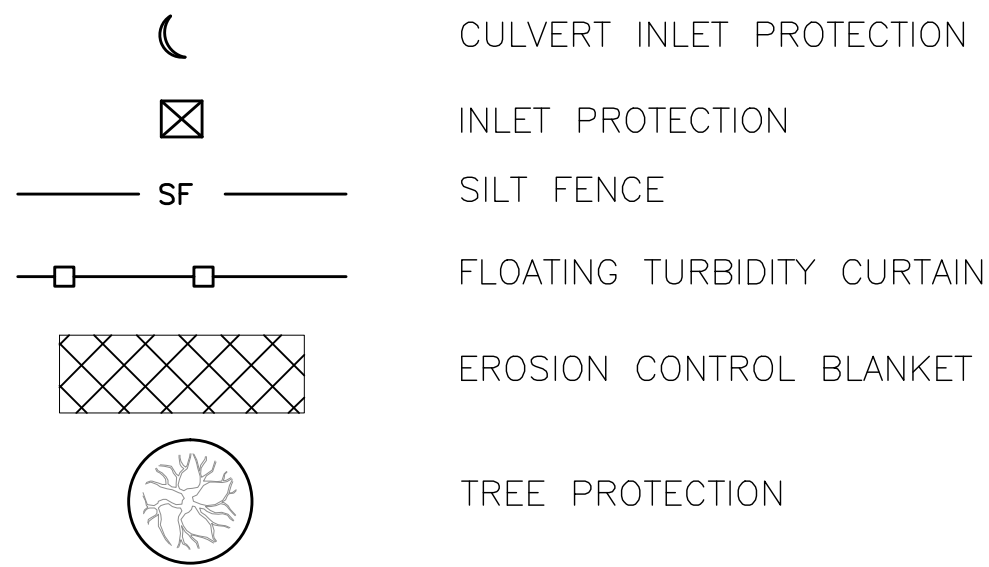
CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

SEDIMENT & EROSION CONTROL PLAN
HILLCREST DRIVE (SHEET 1 OF 2)

Sheet Number:
C-602
Page Number: XX



FINAL DESIGN NOTES
1. TYPICAL DETAILS TO BE ADDED PER ILLINOIS URBAN MANUAL AND/OR LOCAL STANDARDS.
2. EROSION CONTROL PLAN NOTES TO BE ADDED.



Seal

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

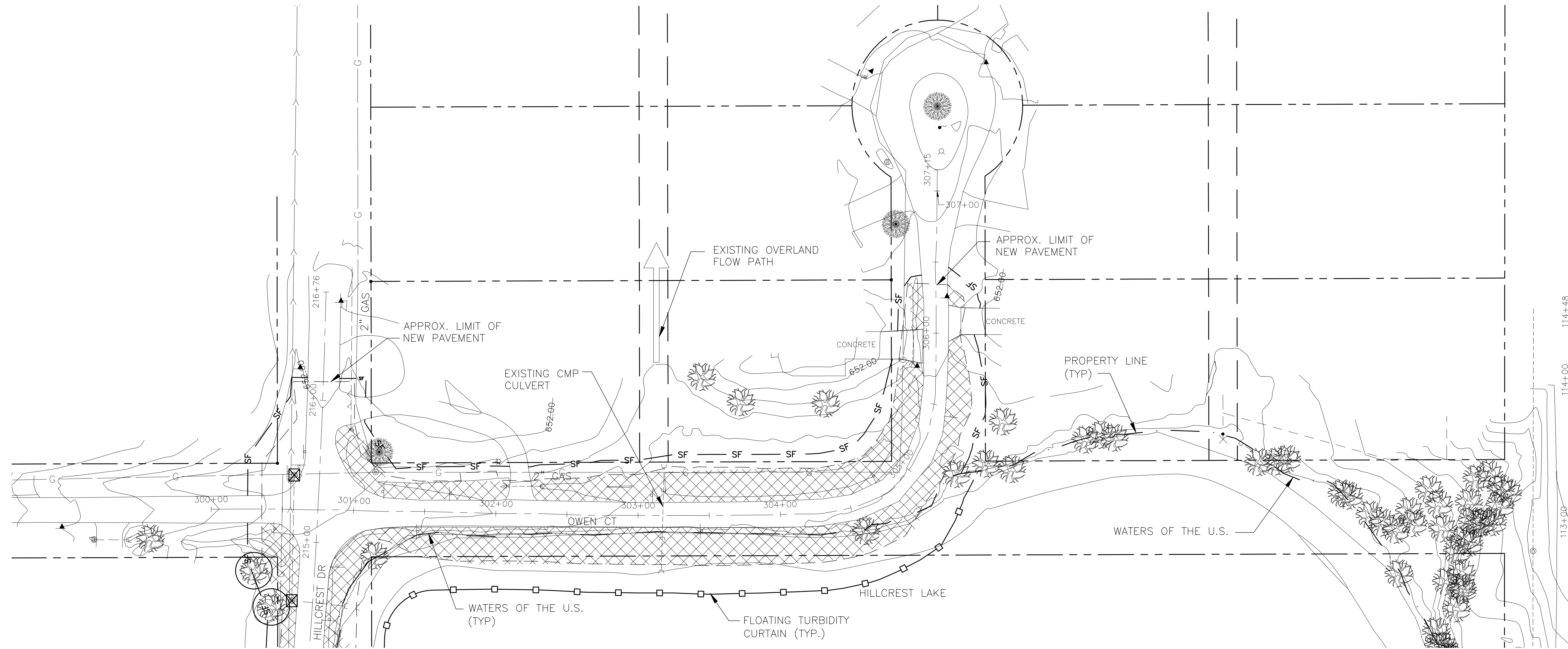
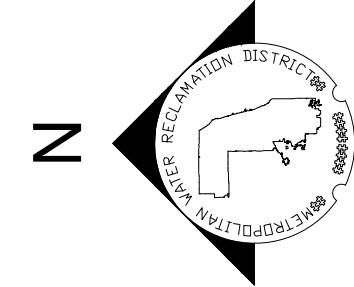
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Date: JULY 2015	Scale: AS SHOWN



CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

SEDIMENT & EROSION CONTROL PLAN
HILLCREST DRIVE (SHEET 2 OF 2)

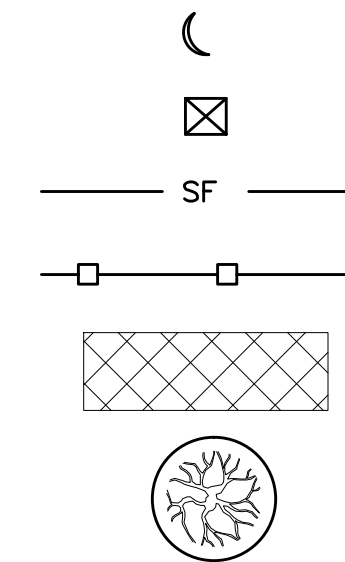
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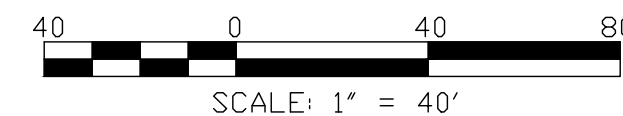
FINAL DESIGN NOTES

1. TYPICAL DETAILS TO BE ADDED PER ILLINOIS URBAN MANUAL AND/OR LOCAL STANDARDS.
2. EROSION CONTROL PLAN NOTES TO BE ADDED.

LEGEND



- CULVERT INLET PROTECTION
- INLET PROTECTION
- SILT FENCE
- FLOATING TURBIDITY CURTAIN
- EROSION CONTROL BLANKET
- TREE PROTECTION



Seal

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

Designed by: DH	Checked by: DH
Drawn by: JWA	Reviewed by: RH
Date: JULY 2015	Scale: AS SHOWN

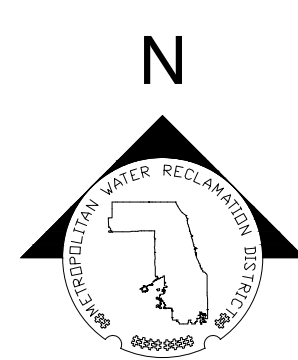
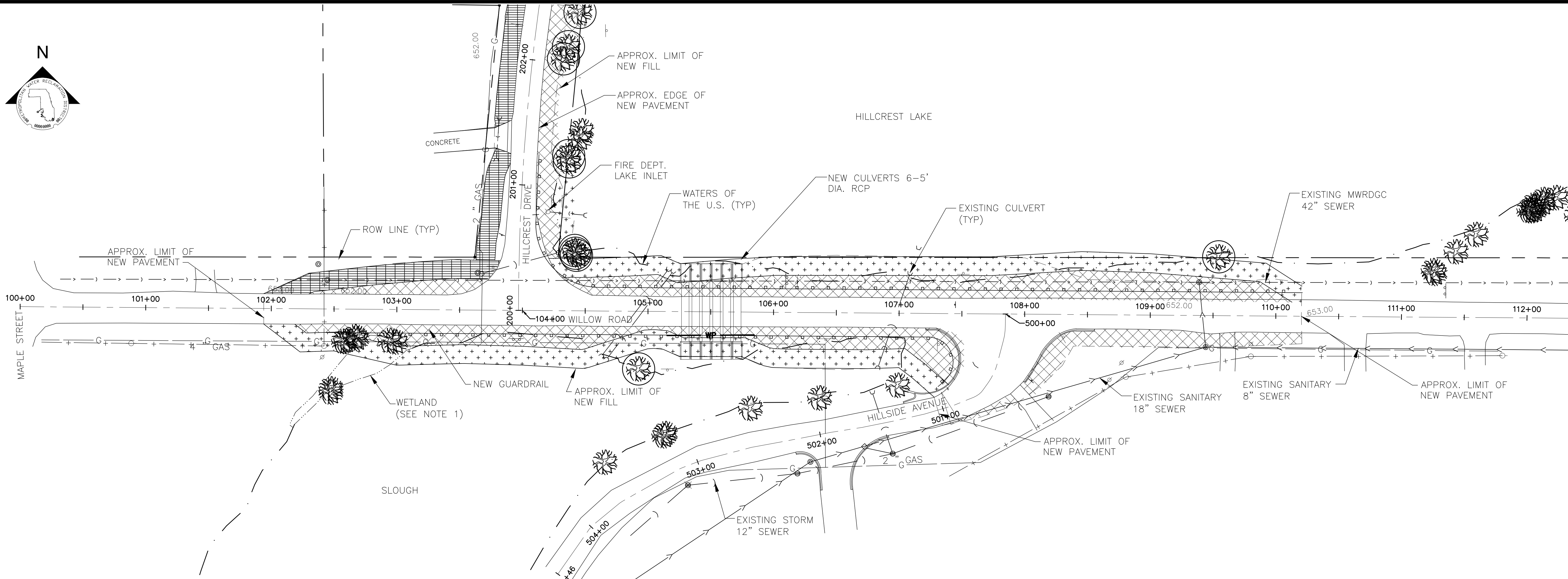


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Engineering Corporation
ENGINEERS - ARCHITECTS
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Chicago, Illinois 60606 U.S.A.
Ph 312-922-6400

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

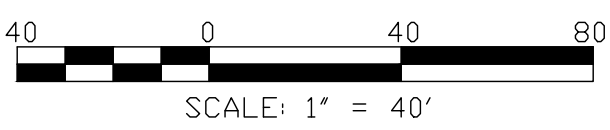
SEDIMENT & EROSION CONTROL PLAN OWEN COURT

Sheet Number:
C-604
Page Number: XX



LEGEND

- TOPSOIL
- SOD
- NATIVE VEGETATION (15' WIDE)



Seal

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

LANDSCAPE PLAN
WILLOW ROAD

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO




Designed by:	Checked by:
DH	DH
Drawn by:	Reviewed by:
JMA	RH
Date:	Scale:
APRIL 2015	AS SHOWN



Rev.	Description	Appr.	Date

Sheet Number:
C-605
Page Number: XX



 TOPSOIL
 SOD
 NATIVE VEGETATION (15' WIDE)



CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

LANDSCAPE PLAN
HILLCREST DRIVE (SHEET 1 OF 2)

Sheet Number:
C-606
Page Number: XX

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

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[illegible]



1. TYPICAL DETAILS TO BE ADDED PER ILLINOIS URBAN MANUAL AND/OR LOCAL STANDARDS.
2. EROSION CONTROL PLAN NOTES TO BE ADDED.

LEGEND





TOPSOIL

SOD

NATIVE VEGETATION (15' WIDE)



SCALE: 1" = 40'

Seal

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

LANDSCAPE PLAN
HILLCREST DRIVE (SHEET 2 OF 2)

Designed by: DH	Checked by: DH
Drawn by: JMA	Reviewed by: RH
Date: APRIL 2015	Scale: AS SHOWN

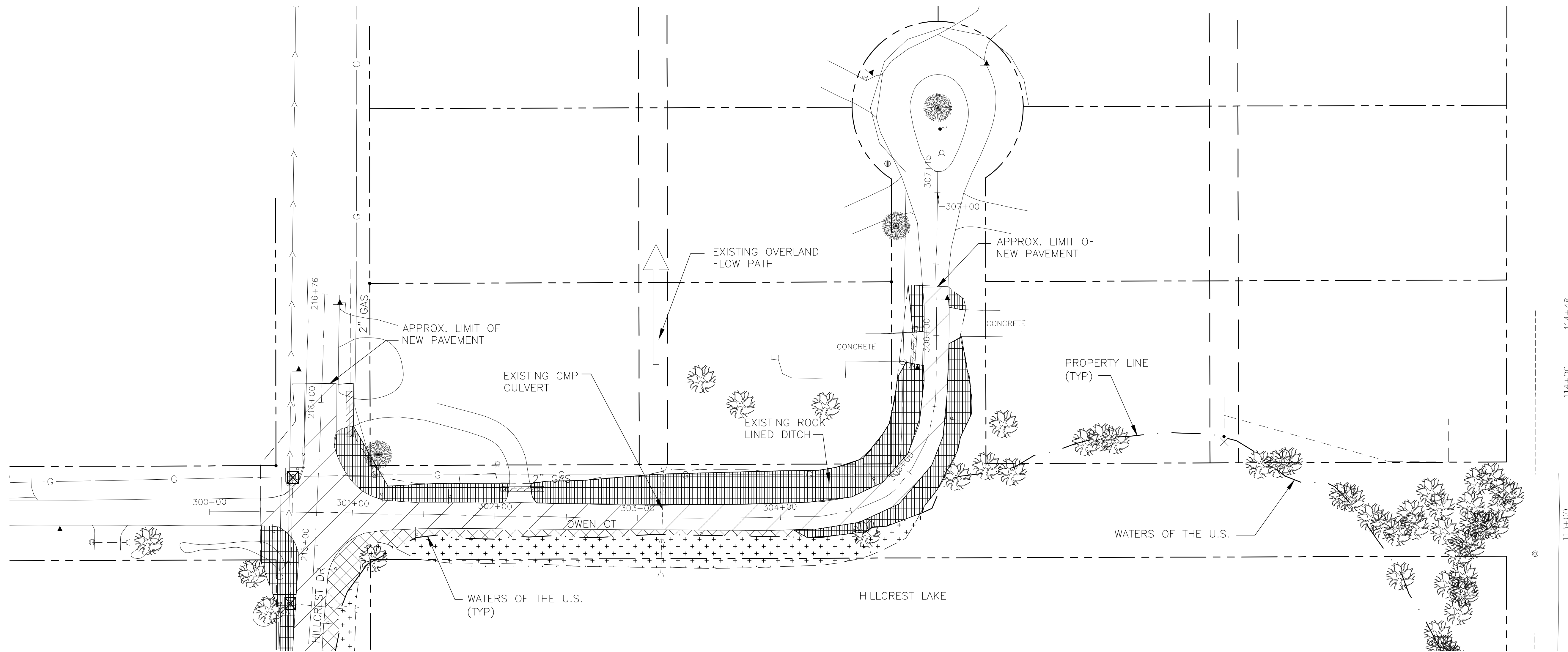
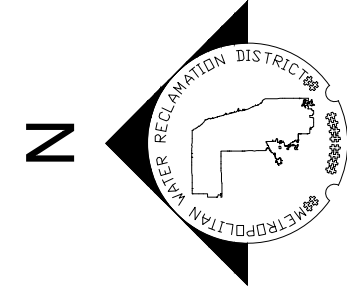


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Sheet Number: C-607

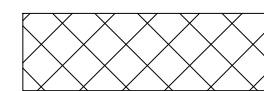
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1. TYPICAL DETAILS TO BE ADDED PER ILLINOIS URBAN MANUAL AND/OR LOCAL STANDARDS.
2. EROSION CONTROL PLAN NOTES TO BE ADDED.

1. TYPICAL DETAILS TO BE ADDED PER ILLINOIS URBAN MANUAL AND/OR LOCAL STANDARDS.
2. EROSION CONTROL PLAN NOTES TO BE ADDED.

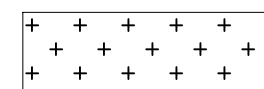
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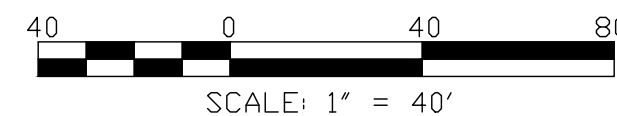
TOPSOIL



SOD



NATIVE VEGETATION (15' WIDE)



SCALE: 1" = 40'

Seal

**METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO**

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

LANDSCAPE PLAN
OWEN COURT

Sheet Number:

C-608

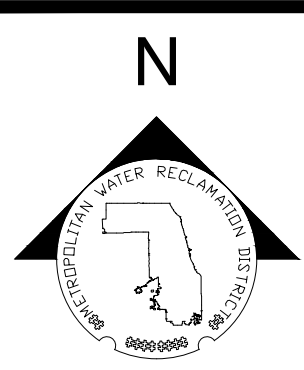
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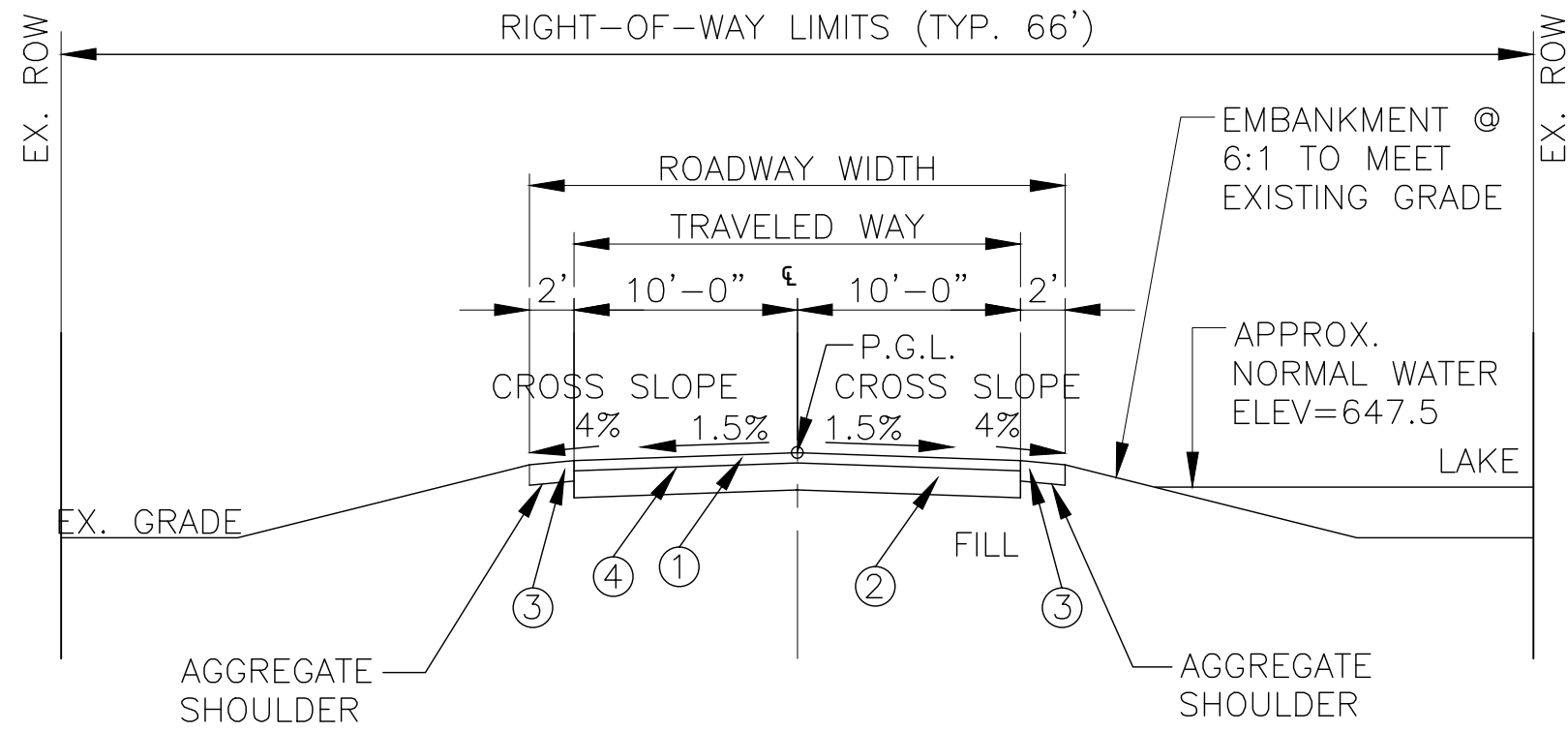
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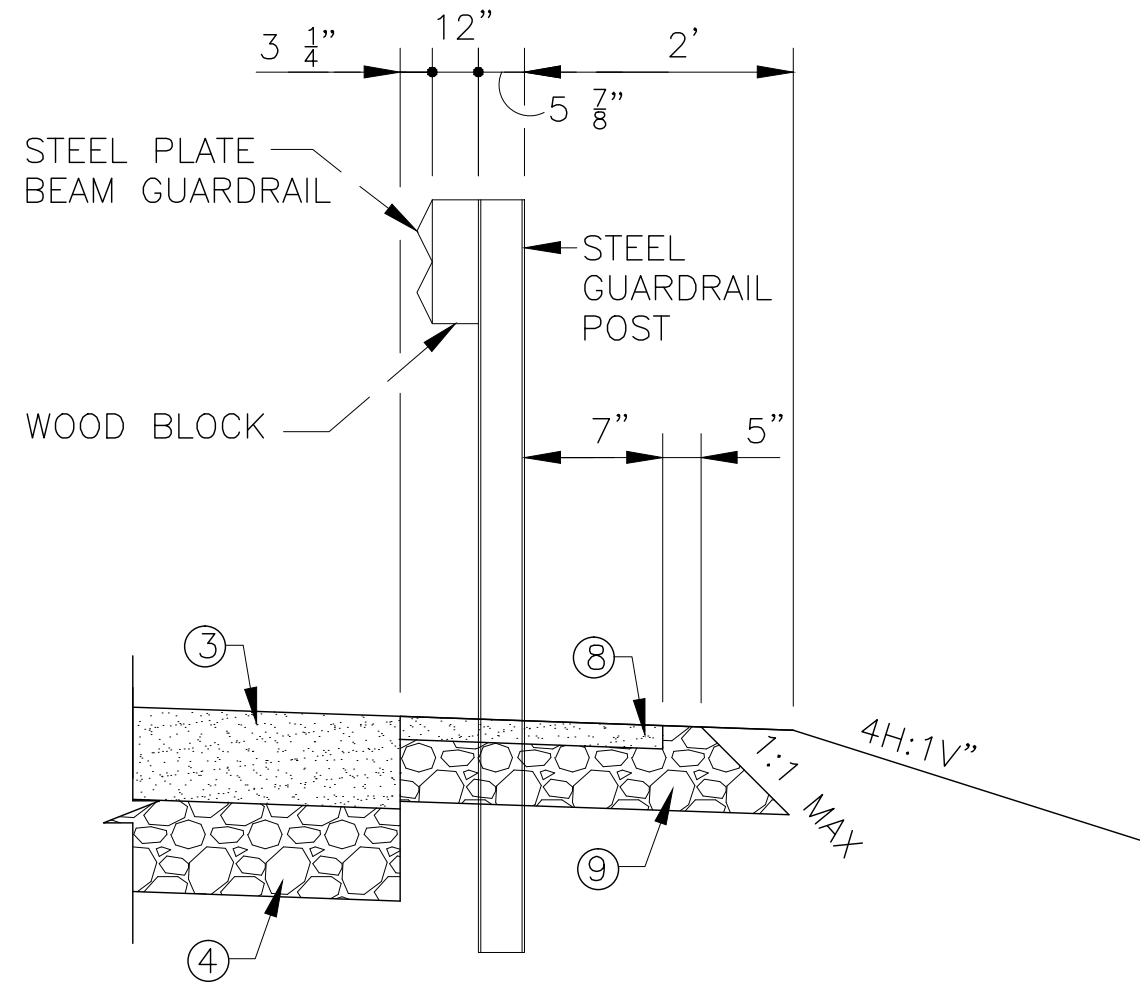
PLOT DATE: 9/2/2016 11:35 AM PLOTTED BY: BORIS LYALIN



- ① 3" HMA PAVEMENT
- ② 8" TYPE A AGGREGATE
- ③ 6" TYPE A AGGREGATE SHOULDER
- ④ BIT. MATERIALS (PRIME COAT)



TYPICAL ROAD AND SHOULDER SECTION -HILLCREST DRIVE AND OWEN COURT
SCALE = N.T.S.

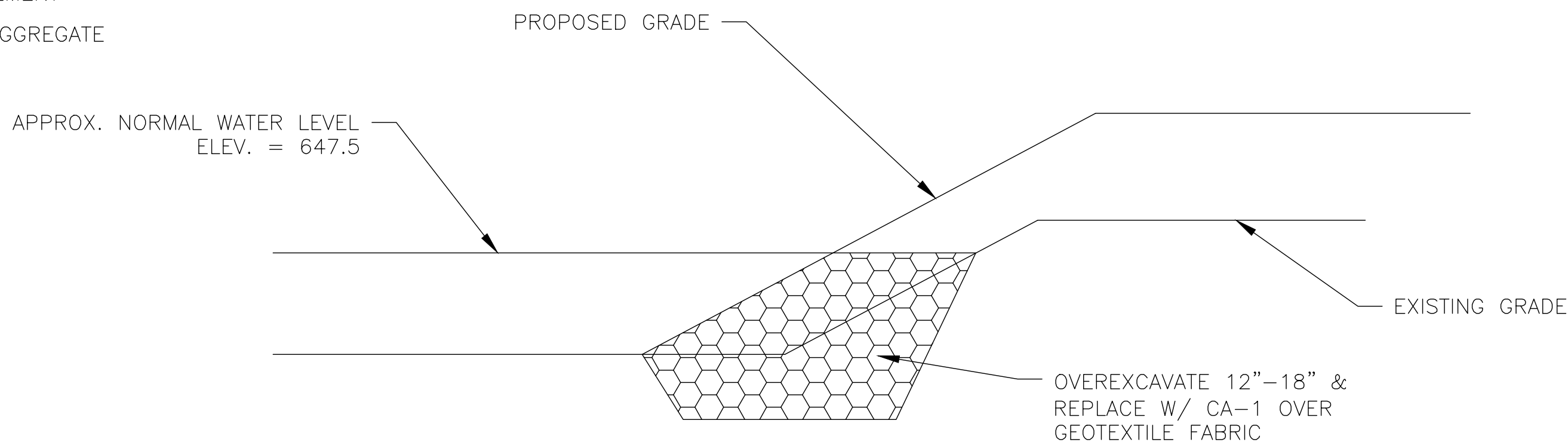


GUARDRAIL AND SHOULDER DETAIL
SCALE = N.T.S.

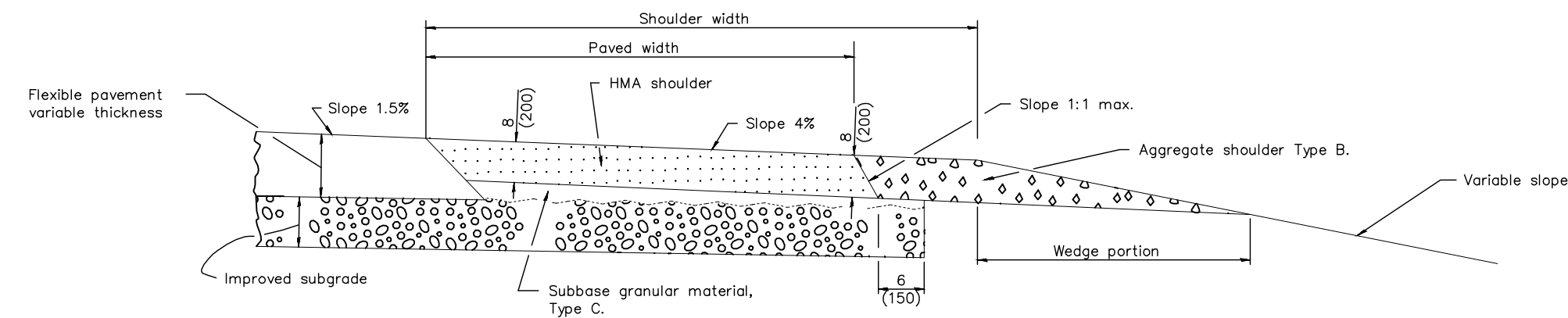
- NOTES:
- DITCHES AND CULVERTS ON HILLCREST / OWEN TO BE RESTORED TO CURRENT GRADES WITH MINOR HORIZONTAL ALIGNMENT MODIFICATION. DISTURBED AREA TO BE RESTORED WITH 4" TOPSOIL AND SEEDED.
 - DRIVEWAYS ON HILLCREST / OWEN TO BE GRADED TO MEET ROAD GRADE. MAXIMUM DRIVEWAY SLOPE - 10%. REPLACE TO MATCH EXISTING DRIVEWAY PAVEMENT TYPE.
 - OWEN COURT TO INCLUDE GUARDRAIL AT THE EDGE OF THE LAKE SIDE SHOULDER. EMBANKMENT SLOPE TO BE 4:1 FROM GUARDRAIL TO LAKE.

- ① 12" FULL DEPTH HMA PAVEMENT
- ② 12" TYPE A AGGREGATE
- ③ 12" HMA SHOULDER
- ④ 12" TYPE A AGGREGATE SHOULDER
- ⑤ PRIME COAT
- ⑥ SOLID DOUBLE YELLOW STRIPE 4" WIDE
- ⑦ SOLID WHITE STRIPE
- ⑧ 3" HMA PAVEMENT
- ⑨ 8" TYPE A AGGREGATE

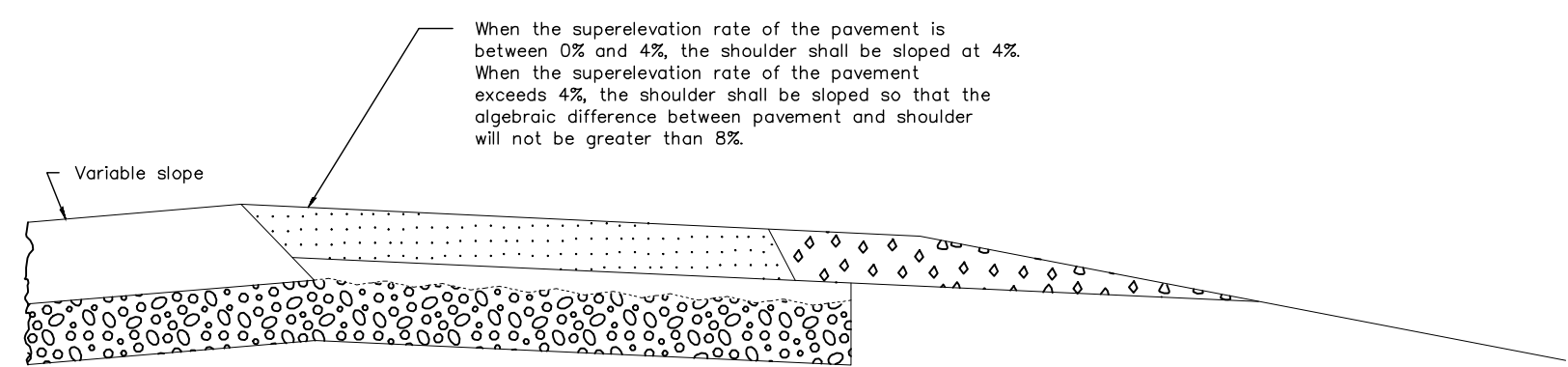
TYPICAL ROAD AND SHOULDER SECTION - WILLOW RD
SCALE = N.T.S.



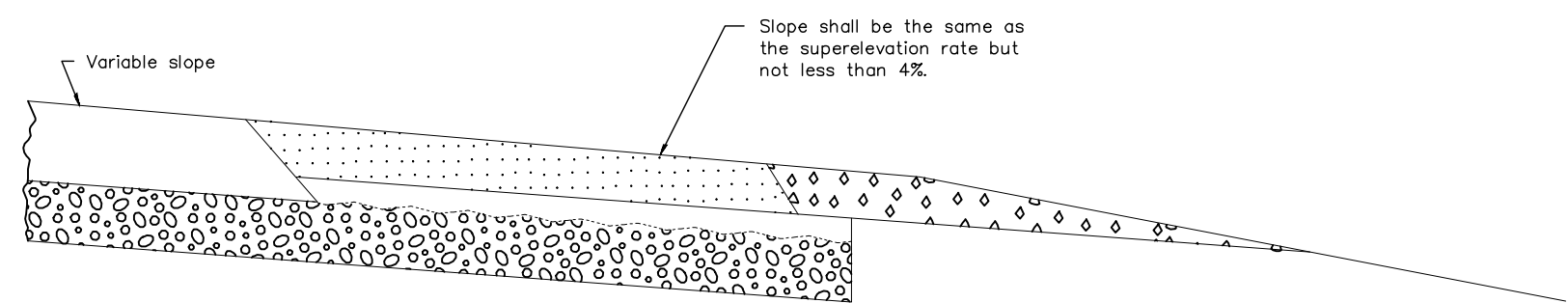
TYPICAL TOE OF SLOPE DETAIL AT WATER
SCALE = N.T.S.



SHOULDER FOR TANGENT PAVEMENT



SHOULDER FOR SUPERELEVATED PAVEMENT
(OUTSIDE OF CURVE)



SHOULDER FOR SUPERELEVATED PAVEMENT
(INSIDE OF CURVE)

GENERAL NOTES
Except as noted or shown the dimensions and notes specified for the shoulder of tangent pavement are typical for the shoulders of super-elevated pavement.
All dimensions are in inches (millimeters) unless otherwise shown.

HMA SHOULDER ADJACENT
TO FLEXIBLE PAVEMENT

STANDARD 482001-02

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

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DH	DH
Drawn by:	Reviewed by:
JMA	RH
Date:	Scale:
JULY 2015	NTS

CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

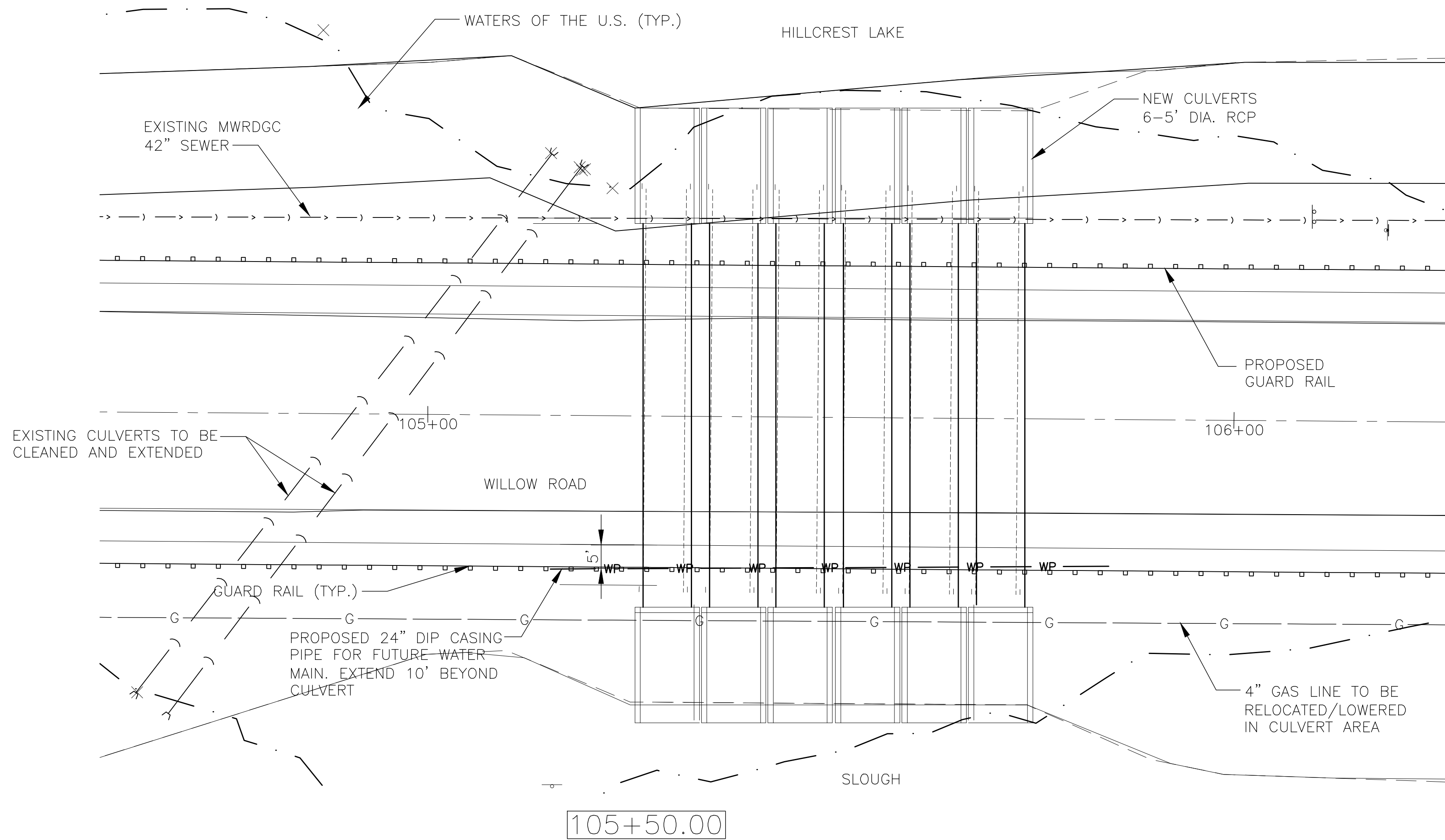
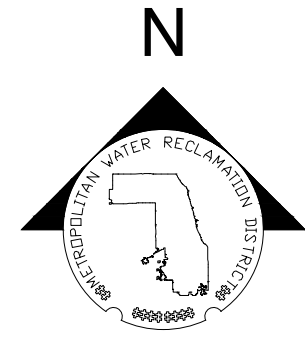
TYPICAL ROADWAY SECTIONS



Rev:	Description	Appr:	Date

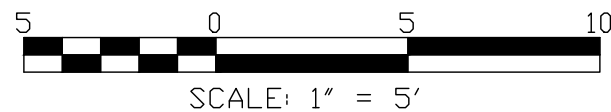
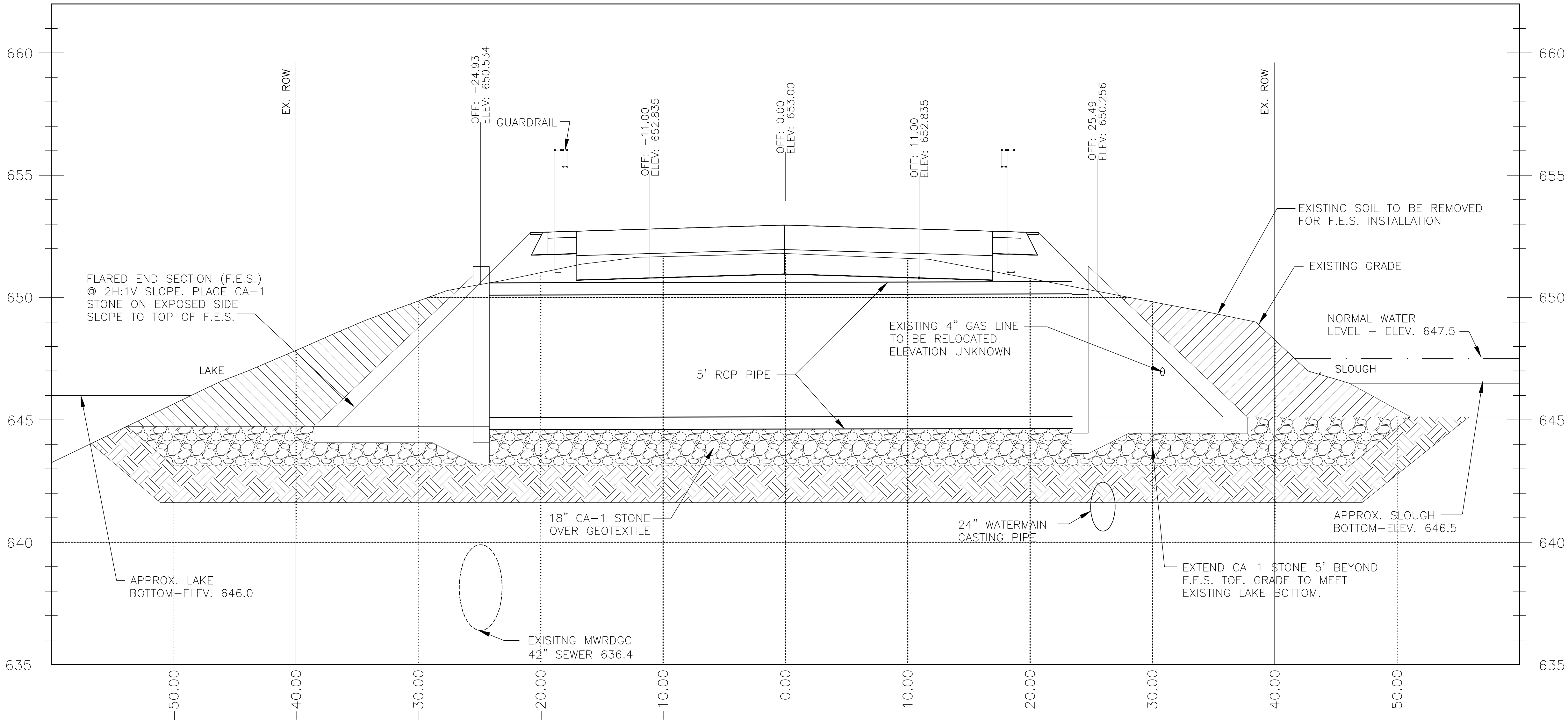
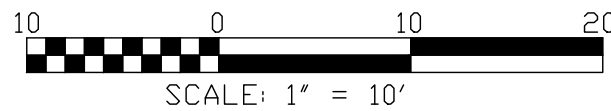
Seal

Sheet Number:
C-801
Page Number: XX



NOTES:

- 1. CULVERTS TO BE INSTALLED IN THE DRY TO MAXIMUM EXTENT POSSIBLE.
- 2. CULVERT INSTALLATION MUST BE PERFORMED PRIOR TO WILLOW ROAD RAISING.
- 3. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED PRIOR TO START OF CONSTRUCTION.
- 4. WATER LEVELS AND LAKE/SLOUGH ELEVATIONS VARY.



Seal

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

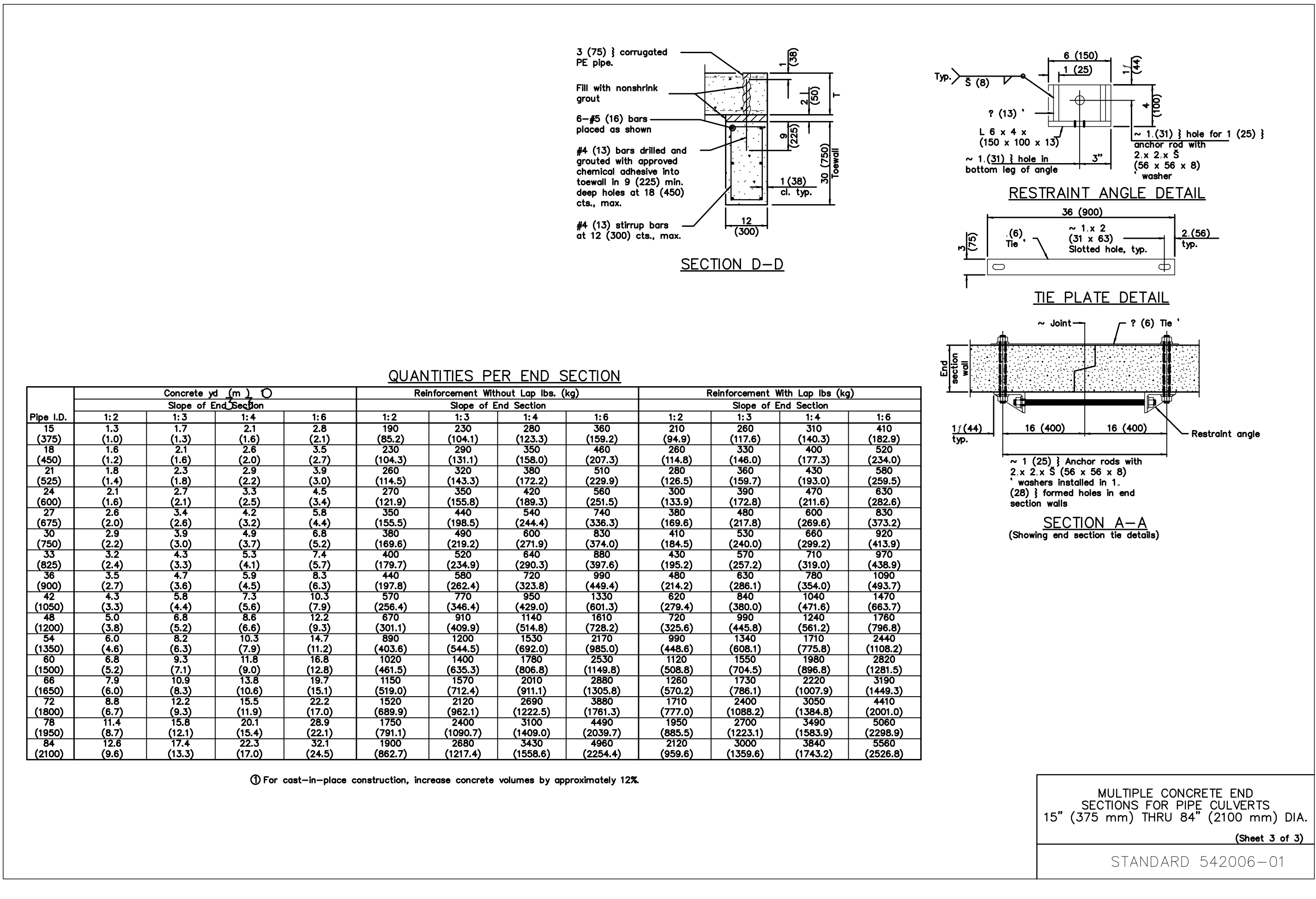
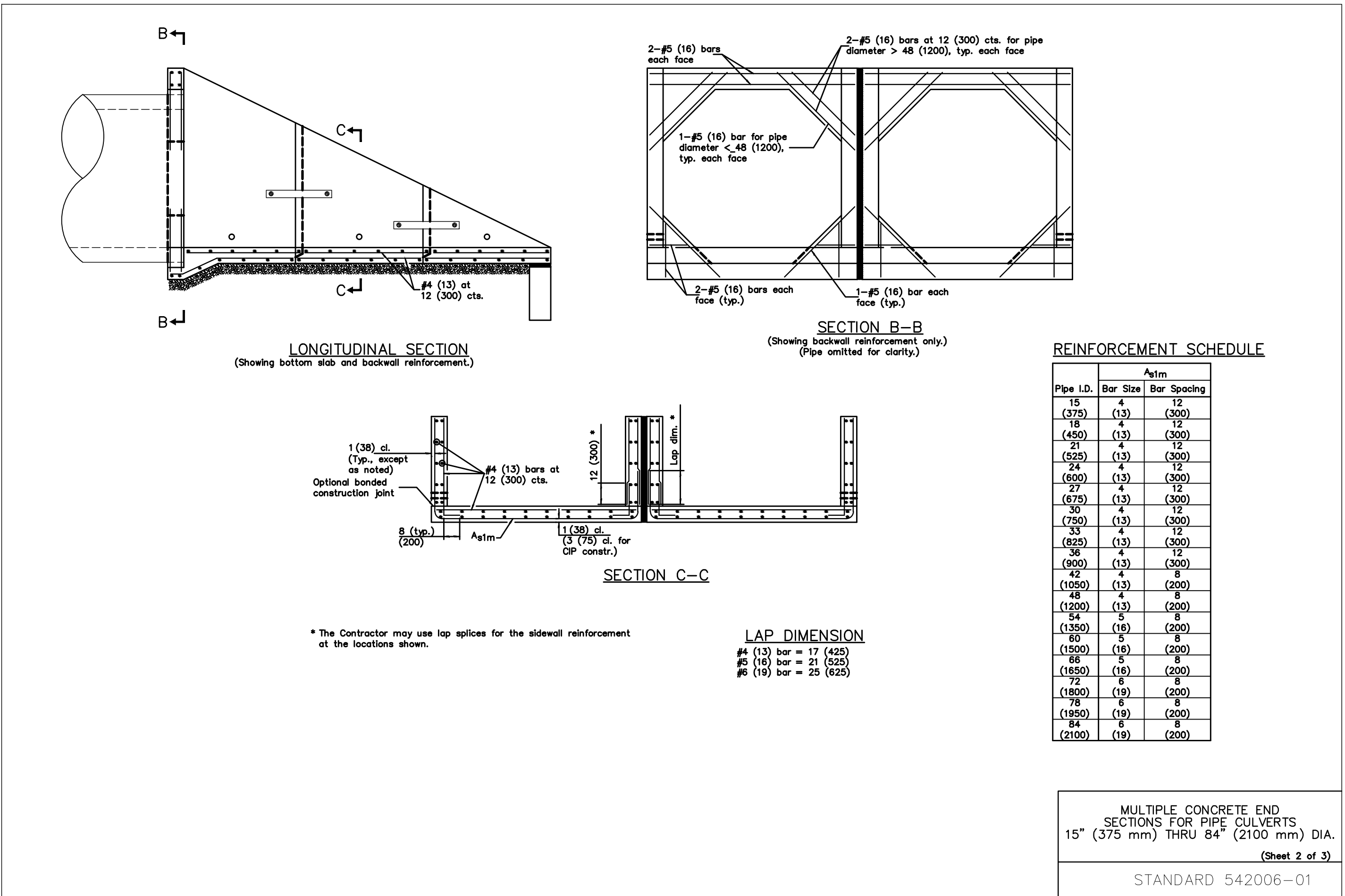
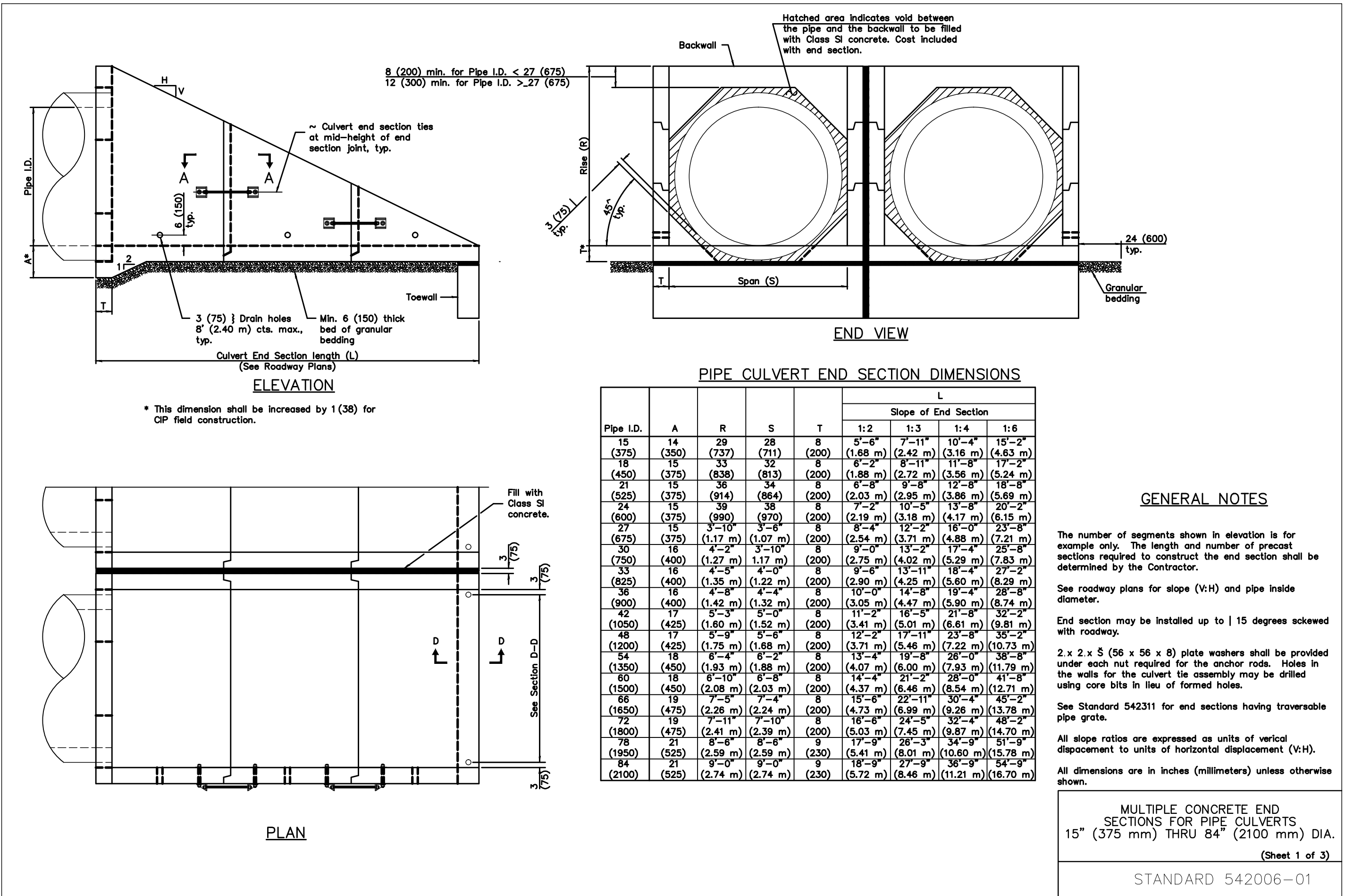
CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

WILLOW ROAD
PROPOSED CULVERT DETAIL



Designed by:	Checked by:
DH	DH
Drawn by:	Reviewed by:
JMA	RH
Date:	Scale:
JULY 2015	AS SHOWN

Sheet Number:
C-802
Page Number: XX



Rev.

Description

Appr.

Date

DESIGNED BY: DH

CHECKED BY: DH

DRAWN BY: JMA

DATE: APRIL 2015

REVIEWED BY: RH

SCALE: NTS

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Seal

Sheet Number: C-803

Page Number: XX

CONTRACT 14-371-5C

WILLOW ROAD FLOOD CONTROL PROJECT

WILLOW ROAD & OWEN COURT

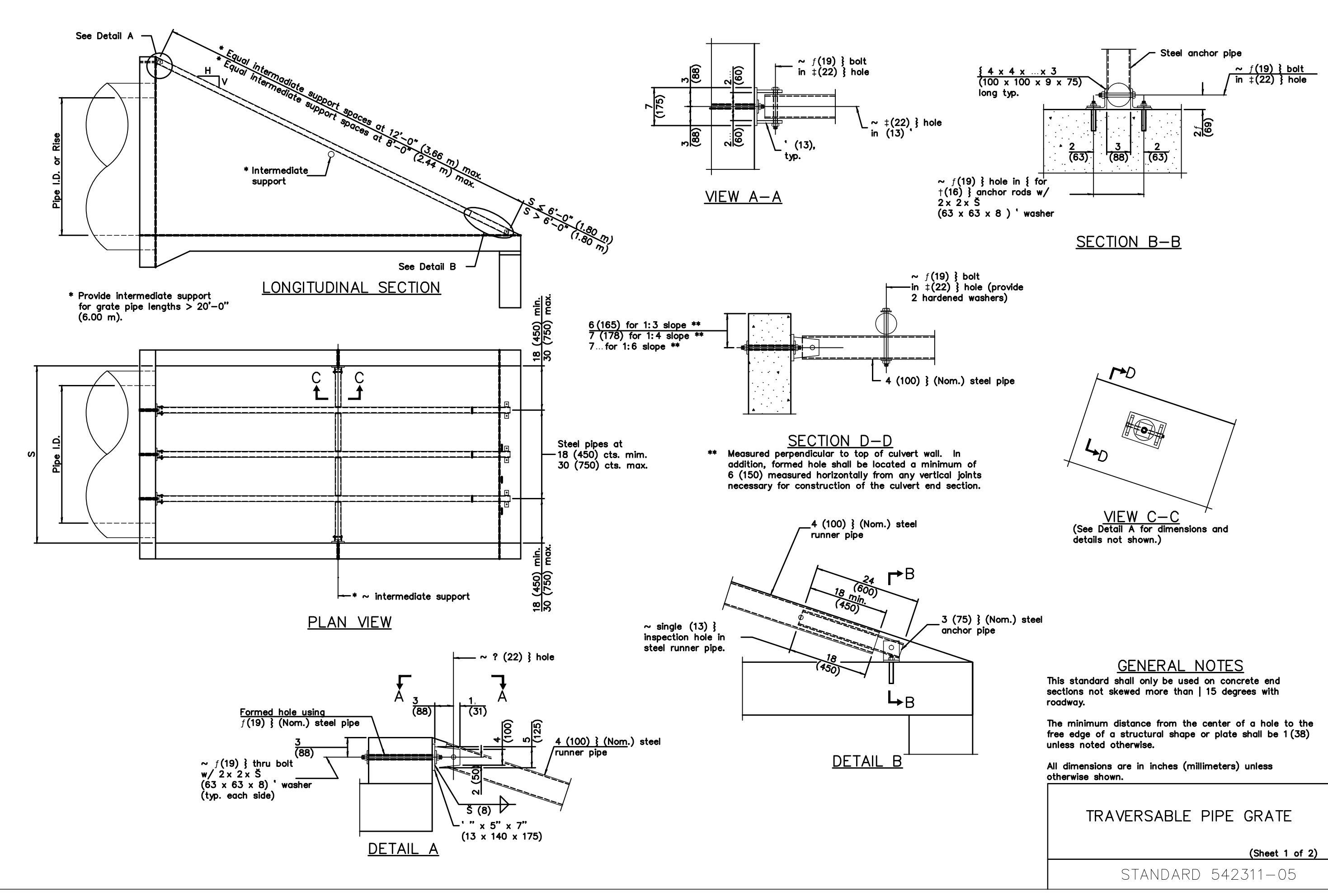
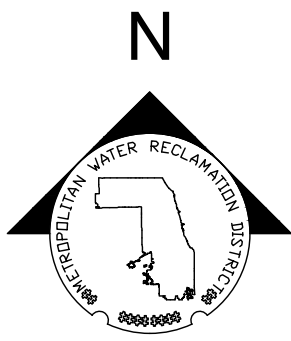
CULVERT DETAILS

Metropolitan Water Reclamation District of Greater Chicago

Globetrotters ENGINEERS-ARCHITECTS

Chicago, Illinois 60606 U.S.A.

Ph: 312.622.6400



FINAL DESIGN NOTES:
1. NEED FOR GRATES TO BE DISCUSSED WITH STAKEHOLDERS. MAY DELETE

PIPE-GRATE SCHEDULE FOR PIPE CULVERT END SECTIONS									
Pipe I.D.	Slope of End Section								
	1:3			1:4			1:6		
	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe
27	1 Ø 9'-8"	N/A	9'-8"	1 Ø 12'-11"	N/A	12'-11"	1 Ø 19'-7"	N/A	19'-7"
(675)	1 Ø (2.95 m)		(2.95 m)	1 Ø (3.94 m)		(3.94 m)	1 Ø (5.97 m)		(5.97 m)
30	1 Ø 11'-4"	N/A	11'-4"	1 Ø 14'-10"	N/A	14'-10"	1 Ø 21'-10"	N/A	21'-10"
(750)	1 Ø (3.43 m)		(3.43 m)	1 Ø (4.52 m)		(4.52 m)	1 Ø (6.65 m)		(6.65 m)
33	1 Ø 12'-1"	N/A	12'-1"	1 Ø 15'-10"	N/A	15'-10"	1 Ø 23'-3"	N/A	23'-3"
(825)	1 Ø (3.68 m)		(3.68 m)	1 Ø (4.83 m)		(4.83 m)	1 Ø (7.14 m)		(7.14 m)
36	1 Ø 12'-10"	N/A	12'-10"	1 Ø 16'-10"	N/A	16'-10"	1 Ø 24'-11"	N/A	24'-11"
(900)	1 Ø (3.91 m)		(3.91 m)	1 Ø (5.13 m)		(5.13 m)	1 Ø (7.59 m)		(7.59 m)
42	2 Ø 14'-9"	N/A	29'-0"	2 Ø 19'-3"	N/A	38'-6"	2 Ø 28'-6"	N/A	57'-0"
(1050)	2 Ø (4.50 m)		(9.00 m)	2 Ø (5.87 m)		(11.74 m)	2 Ø (8.69 m)		(17.38 m)
48	2 Ø 16'-4"	N/A	32'-8"	2 Ø 21'-4"	N/A	42'-8"	2 Ø 31'-4"	N/A	62'-8"
(1200)	2 Ø (4.98 m)		(9.96 m)	2 Ø (6.50 m)		(13.00 m)	2 Ø (9.60 m)		(19.20 m)
54	2 Ø 18'-2"	N/A	36'-4"	2 Ø 23'-9"	N/A	47'-8"	2 Ø 35'-1"	N/A	70'-2"
(1350)	2 Ø (5.54 m)		(11.08 m)	2 Ø (7.24 m)		(14.48 m)	2 Ø (10.69 m)		(21.38 m)
60	2 Ø 19'-9"	N/A	39'-8"	2 Ø 25'-10"	N/A	50'-8"	2 Ø 38'-1"	N/A	76'-1"
(1500)	2 Ø (6.02 m)		(12.04 m)	2 Ø (7.87 m)		(15.74 m)	2 Ø (11.61 m)		(23.22 m)
66	2 Ø 21'-7"	N/A	43'-4"	2 Ø 28'-2"	N/A	56'-6"	2 Ø 41'-11"	N/A	82'-11"
(1650)	2 Ø (6.58 m)		(13.16 m)	2 Ø (8.59 m)		(17.18 m)	2 Ø (12.78 m)		(25.56 m)
72	3 Ø 23'-2"	N/A	69'-6"	3 Ø 30'-3"	N/A	90'-6"	3 Ø 44'-8"	N/A	133'-4"
(1800)	3 Ø (7.06 m)		(21.18 m)	3 Ø (9.22 m)		(27.66 m)	3 Ø (13.61 m)		(40.83 m)
78	3 Ø 25'-0"	N/A	75'-0"	3 Ø 32'-8"	N/A	98'-4"	3 Ø 48'-3"	N/A	146'-3"
(1950)	3 Ø (7.62 m)		(22.86 m)	3 Ø (10.00 m)		(30.00 m)	3 Ø (14.71 m)		(44.13 m)
84	3 Ø 26'-7"	N/A	80'-4"	3 Ø 34'-9"	N/A	104'-8"	3 Ø 51'-3"	N/A	156'-3"
(2100)	3 Ø (8.10 m)		(24.30 m)	3 Ø (10.59 m)		(31.77 m)	3 Ø (15.62 m)		(47.34 m)

PIPE-GRATE SCHEDULE FOR ELLIPTICAL PIPE CULVERT END SECTIONS									
Pipe I.D. (Equiv. Round)	Slope of End Section								
	1:3			1:4			1:6		
	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe	Main Pipe No. / Length	Int. Support No. / Length	Total Length of Pipe
21	1 Ø 8'-2"	N/A	8'-2"	1 Ø 11'-2"	N/A	11'-2"	1 Ø 17'-5"	N/A	17'-5"
(525)	1 Ø (2.49 m)		(2.49 m)	1 Ø (3.40 m)		(3.40 m)	1 Ø (5.31 m)		(5.31 m)
24	1 Ø 8'-2"	N/A	8'-2"	1 Ø 11'-2"	N/A	11'-2"	1 Ø 17'-5"	N/A	17'-5"
(600)	1 Ø (2.49 m)		(2.49 m)	1 Ø (3.40 m)		(3.40 m)	1 Ø (5.31 m)		(5.31 m)
27	1 Ø 8'-2"	N/A	8'-2"	1 Ø 11'-2"	N/A	11'-2"	1 Ø 17'-5"	N/A	17'-5"
(675)	1 Ø (2.72 m)		(2.72 m)	1 Ø (3.71 m)		(3.71 m)	1 Ø (5.77 m)		(5.77 m)
30	1 Ø 9'-5"	N/A	9'-5"	1 Ø 12'-11"	N/A	12'-11"	1 Ø 19'-7"	N/A	19'-7"
(750)	1 Ø (2.87 m)		(2.87 m)	1 Ø (3.94 m)		(3.94 m)	1 Ø (5.97 m)		(5.97 m)
36	2 Ø 11'-0"	N/A	22'-0"	2 Ø 14'-10"	N/A	29'-0"	2 Ø 21'-10"	N/A	42'-0"
(900)	2 Ø (3.35 m)		(6.70 m)	2 Ø (4.52 m)		(9.04 m)	2 Ø (6.65 m)		(13.30 m)
42	2 Ø 12'-4"	N/A	24'-8"	2 Ø 16'-10"	N/A	32'-8"	2 Ø 24'-11"	N/A	49'-0"
(1050)	2 Ø (3.76 m)		(7.52 m)	2 Ø (5.08 m)		(10.16 m)	2 Ø (7.77 m)		(15.54 m)
48	2 Ø 13'-8"	N/A	27'-6"	2 Ø 18'-5"	N/A	36'-10"	2 Ø 28'-0"	N/A	56'-0"
(1200)	2 Ø (4.17 m)		(8.34 m)	2 Ø (5.61 m)		(11.22 m)	2 Ø (8.53 m)		(17.06 m)
54	2 Ø 15'-0"	N/A	30'-0"	2 Ø 20'-11"	N/A	41'-11"	2 Ø 30'-7"	N/A	61'-4"
(1350)	2 Ø (4.57 m)		(9.14 m)	2 Ø (6.12 m)		(12.24 m)	2 Ø (9.32 m)		(18.66 m)
60	3 Ø 16'-7"	N/A	49'-6"	3 Ø 22'-7"	N/A	68'-0"	3 Ø 33'-7"	N/A	101'-4"
(1500)	3 Ø (5.05 m)		(15.15 m)	3 Ø (6.76 m)		(20.28 m)	3 Ø (10.24 m)		(30.72 m)
66	3 Ø 17'-11"	N/A	53'-9"	3 Ø 23'-11"	N/A	73'-0"	3 Ø 36'-2"	N/A	109'-2"
(1650)	3 Ø (5.46 m)		(16.38 m)	3 Ø (7.29 m)		(21.87 m)	3 Ø (11.02 m)		(33.10 m)
72	3 Ø 19'-6"	N/A	58'-6"	3 Ø 25'-11"	N/A	79'-0"	3 Ø 39'-2"	N/A	118'-2"
(1800)	3 Ø (5.94 m)		(17.82 m)	3 Ø (7.90 m)		(23.70 m)	3 Ø (11.94 m)		(35.88 m)

TRAVERSABLE PIPE GRATE

(Sheet 2 of 2)

STANDARD 542311-05

Rev.

Description

Appr.

Date

DESIGNED BY:
DH

CHECKED BY:
DH

DRAWN BY:
JMA

DATE:
APRIL 2015

REVIEWED BY:
RH

SCALE:
NTS

CONTRACT 14-371-5C

WILLOW ROAD FLOOD CONTROL PROJECT

WILLOW ROAD & OWEN COURT

PIPE GRATE DETAILS

Sheet Number:

C-804

Page Number: XX

Seal

Metropolitan Water Reclamation District of Greater Chicago

Globetrotters Engineering Corporation

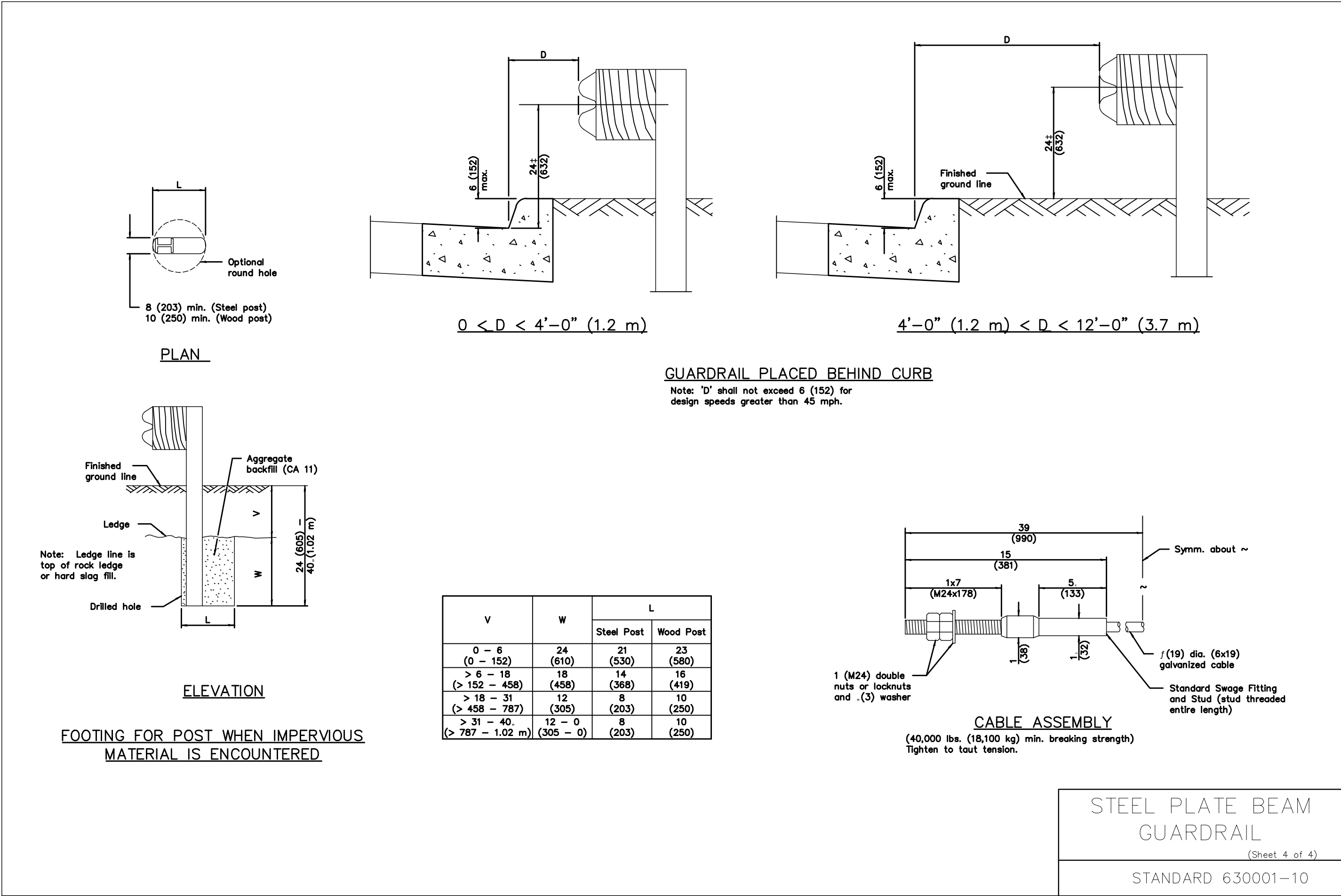
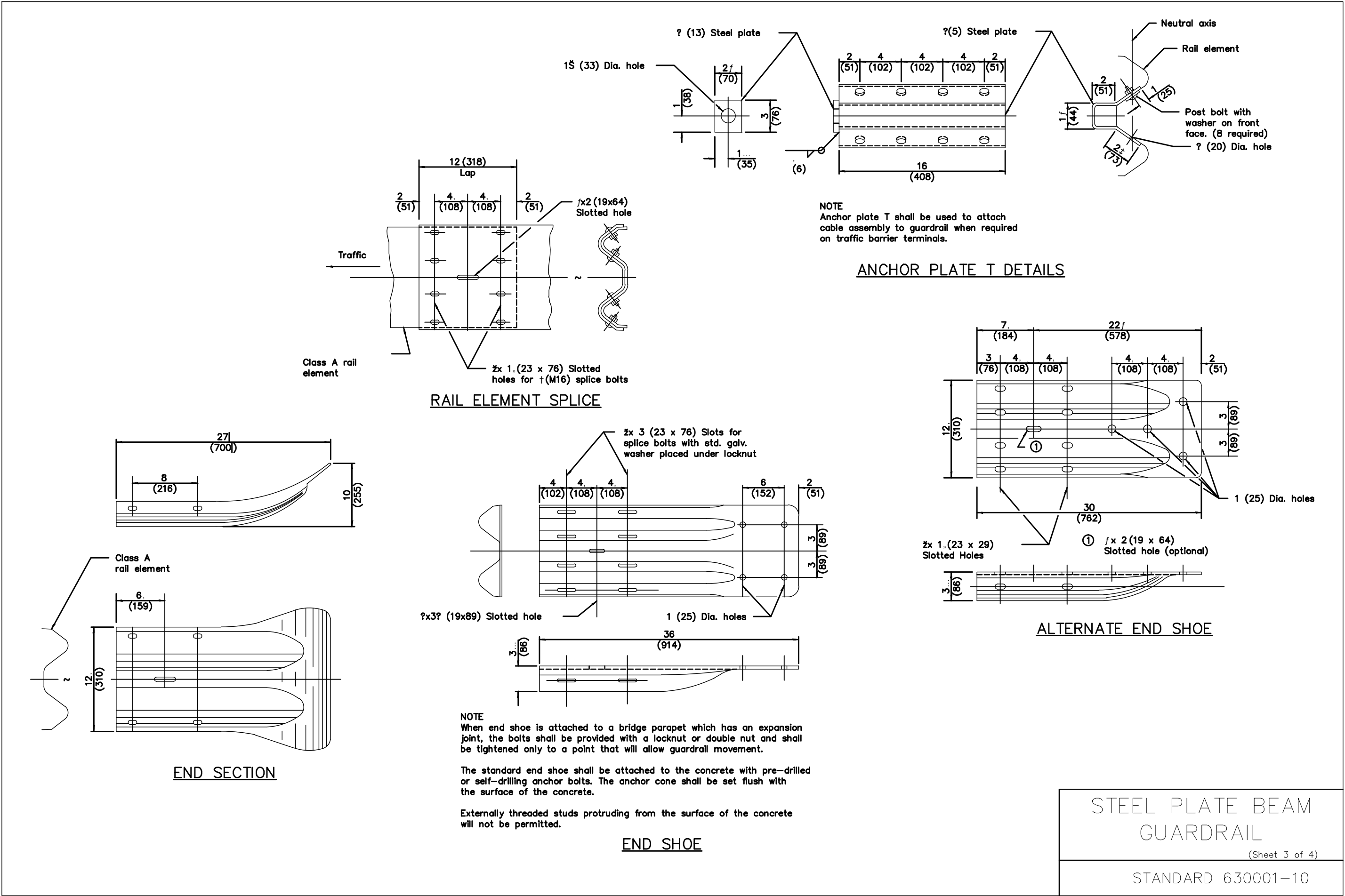
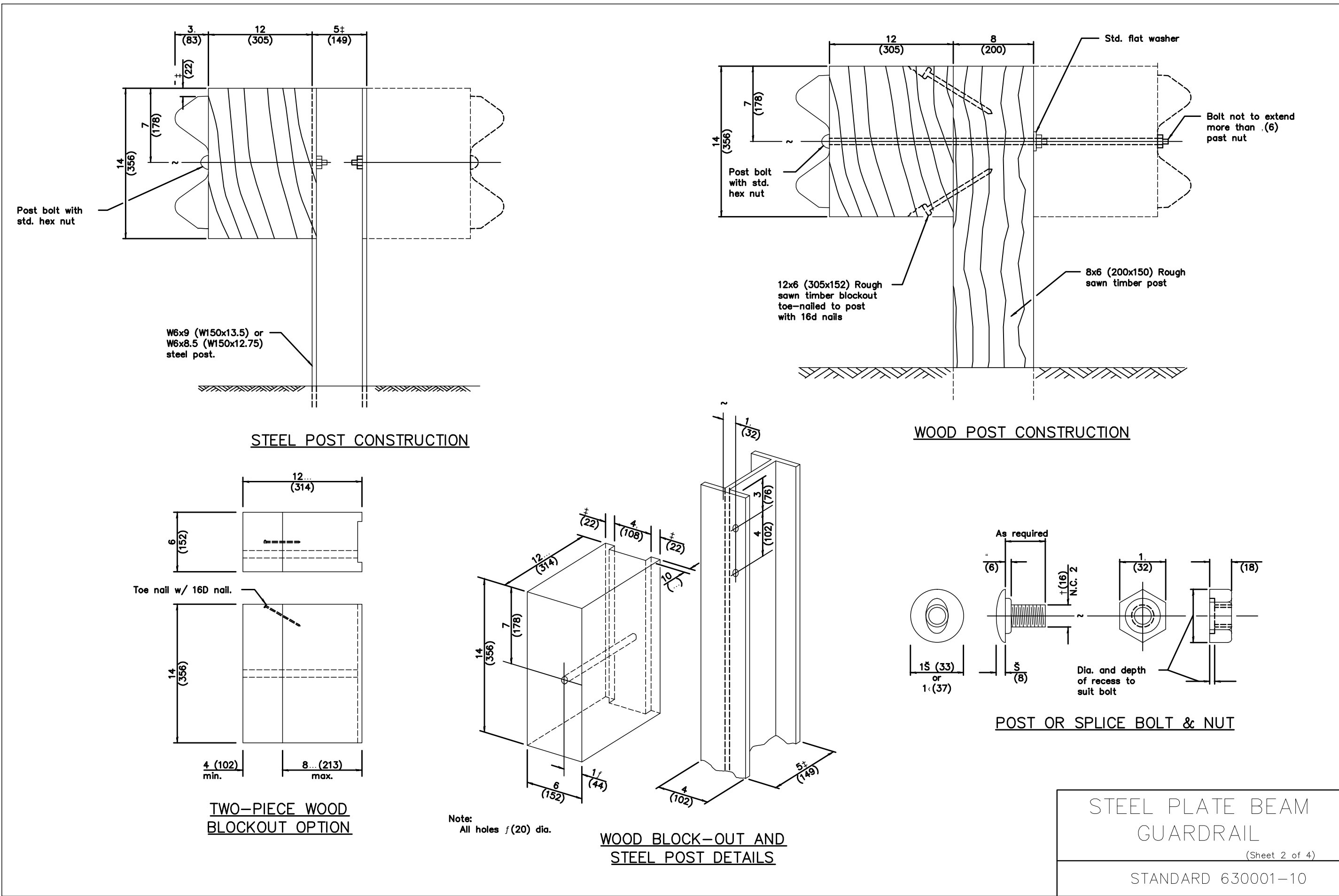
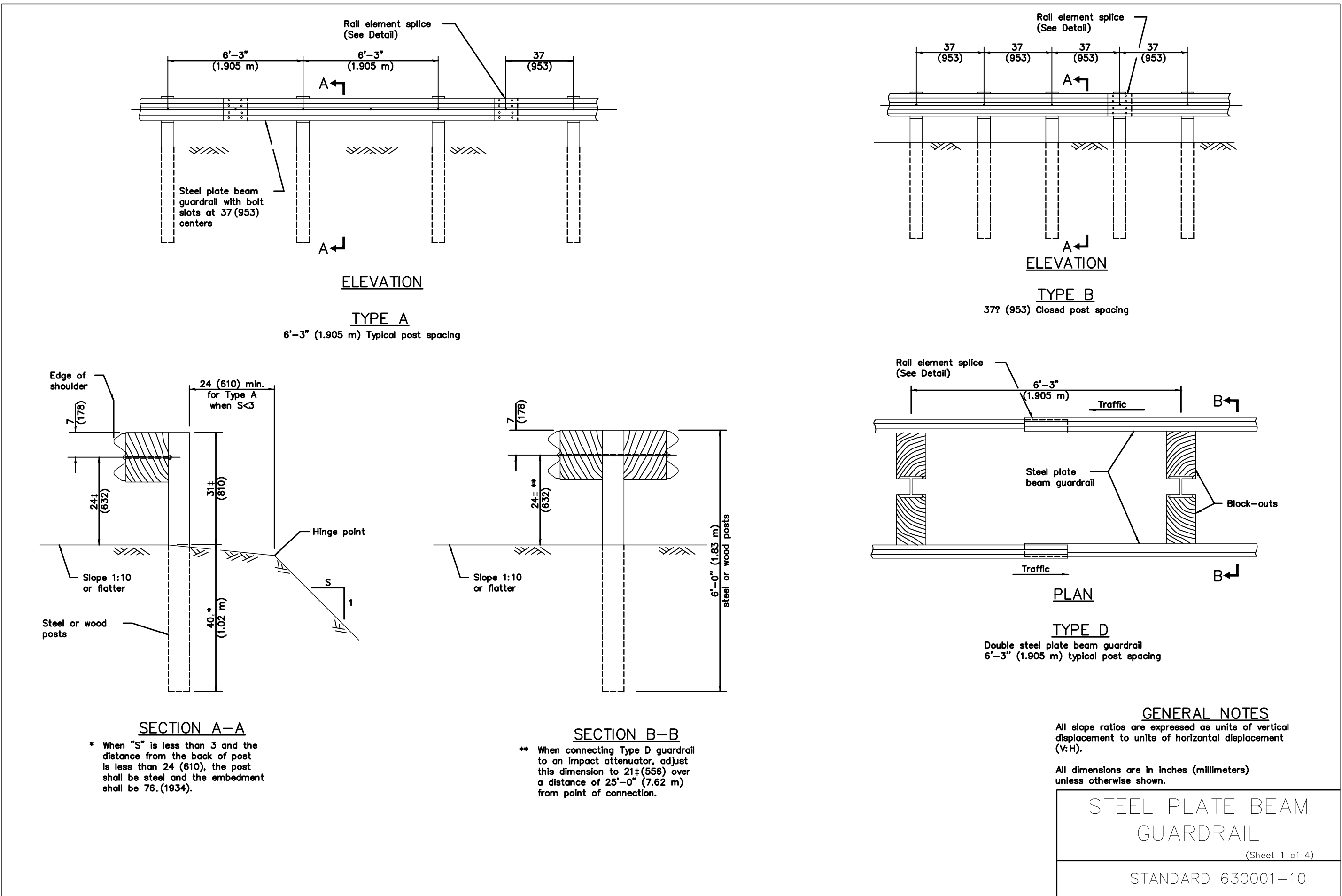
ENGINEERS - ARCHITECTS

Chicago, Illinois 60606 U.S.A.

PH 312-622-6400

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PLOT DATE: 9/2/2016 11:25 AM PLOTTED BY: BORIS LYALIN



Rev.	Description	Appr.	Date

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

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JMA	RH
Date:	Scale:
APRIL 2015	NTS

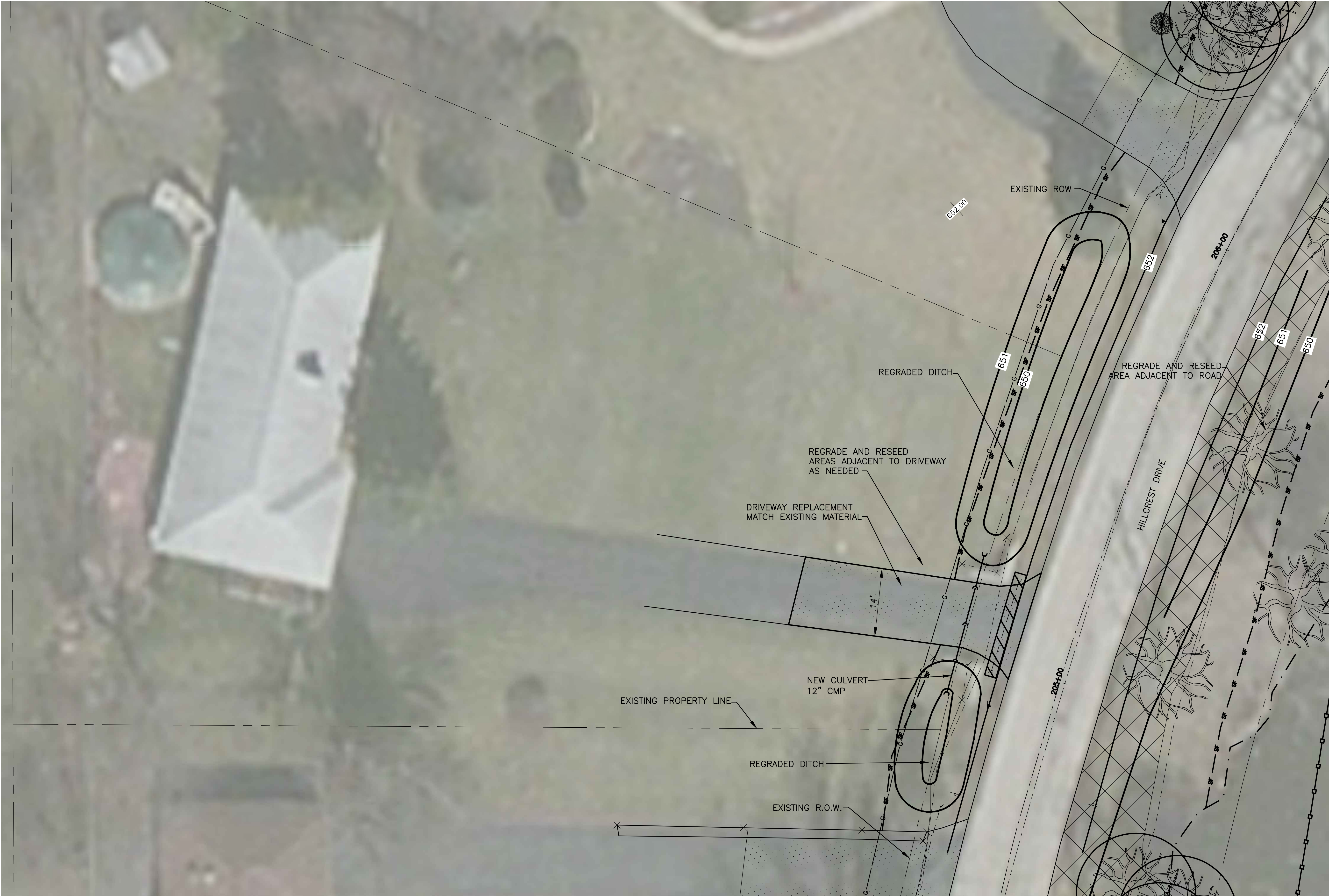
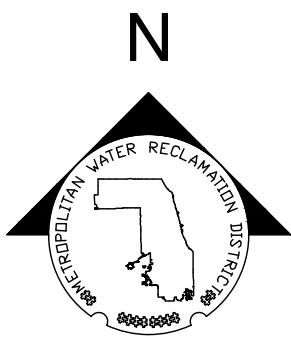


CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

GUARDRAIL DETAILS

Seal

Sheet Number:
C-805
Page Number: XX



Seal

CONTRACT14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

TYPICAL DITCH AND DRIVEWAY
RECONSTRUCTION

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

Designed by:
DH

Checked by:
DH

Drawn by:
RE

Reviewed by:
RH

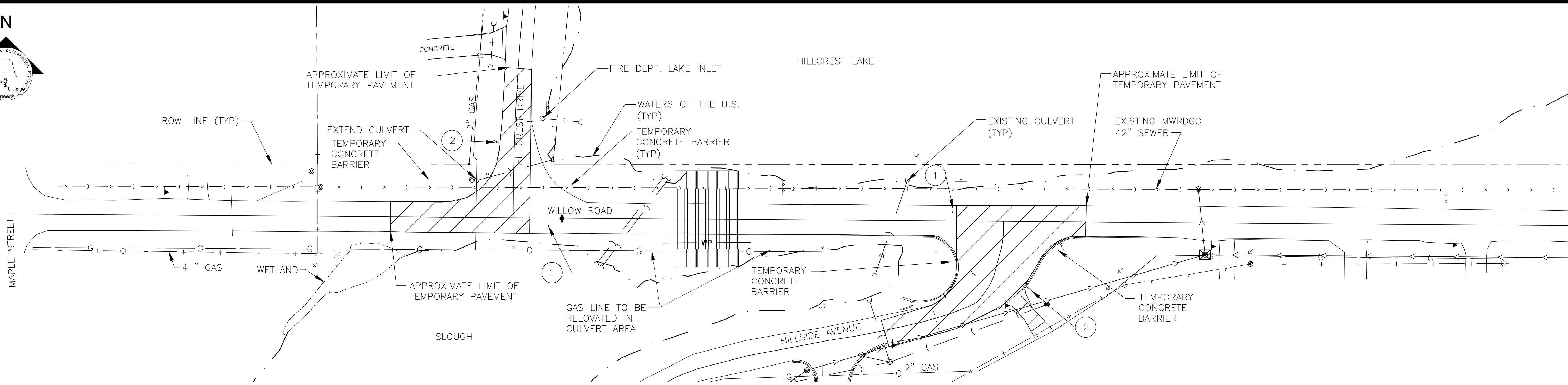
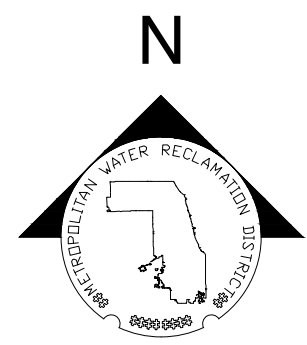
Date:
JULY 2015

Scale:
AS SHOWN

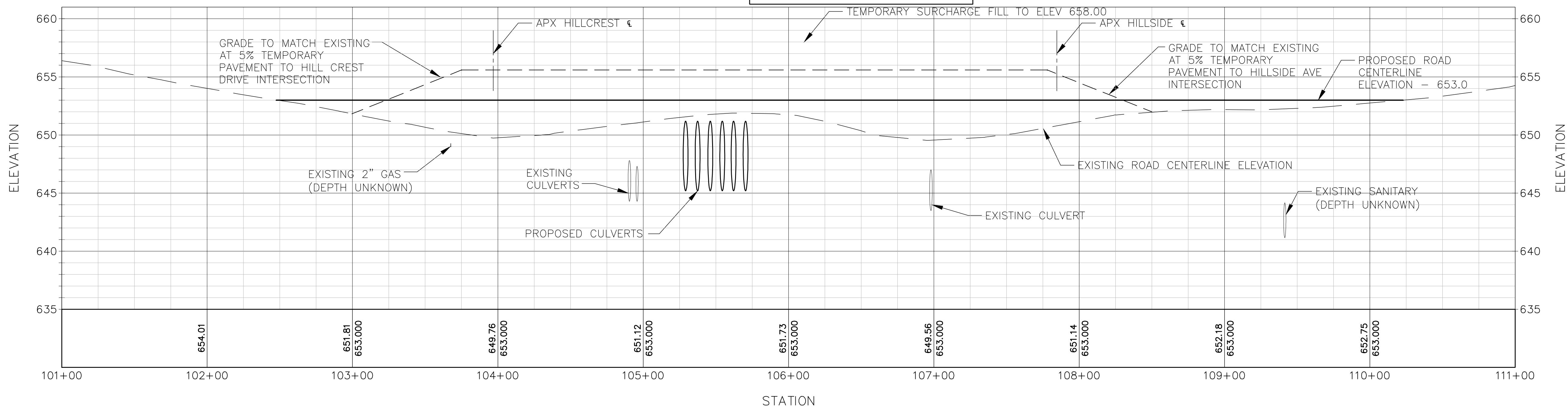
Globetrotters
Engineering Corporation
ENGINEERS - ARCHITECTS
Chicago, Illinois 60606 U.S.A.
PH 312-622-6400

Rev.	Description	Appr.	Date

P:\projects\14025\000\Contracts\14-371-5C\01_Civil\Sheets\C-901.dwg 8/31/2016 3:31 PM
PLOT DATE: 9/2/2016 11:01 AM PLOTTED BY: BORIS LYALIN



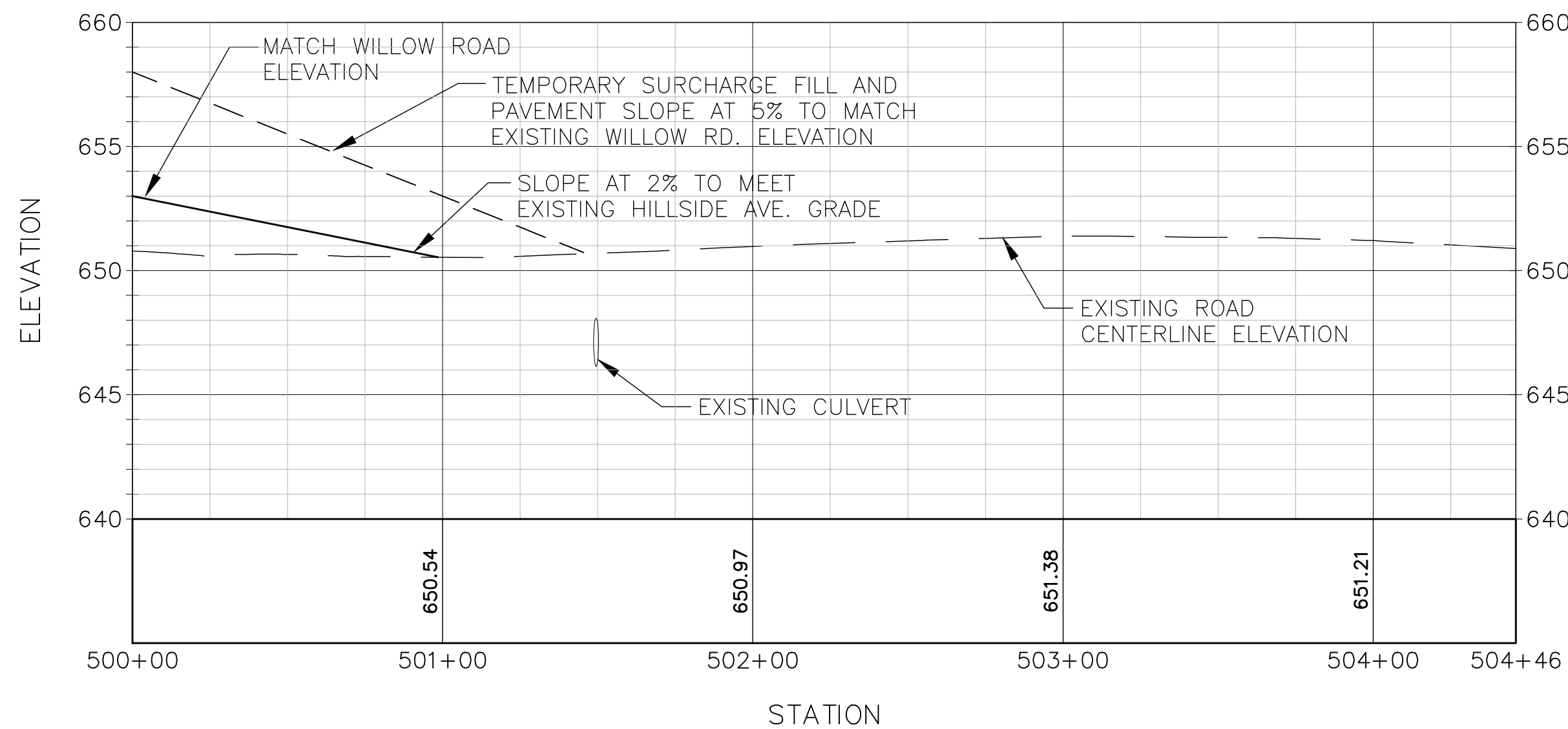
Willow Road Profile



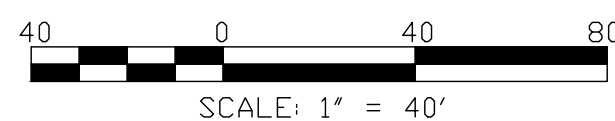
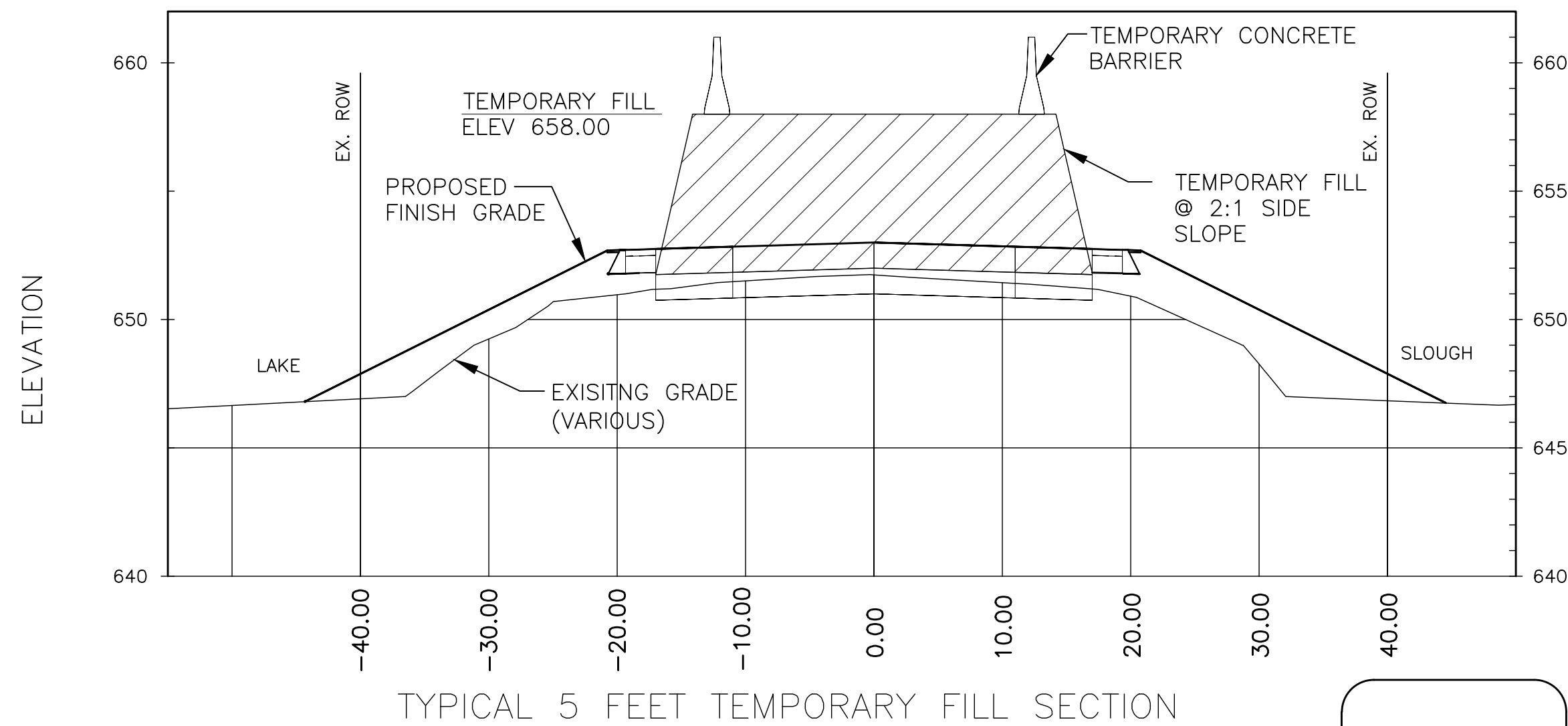
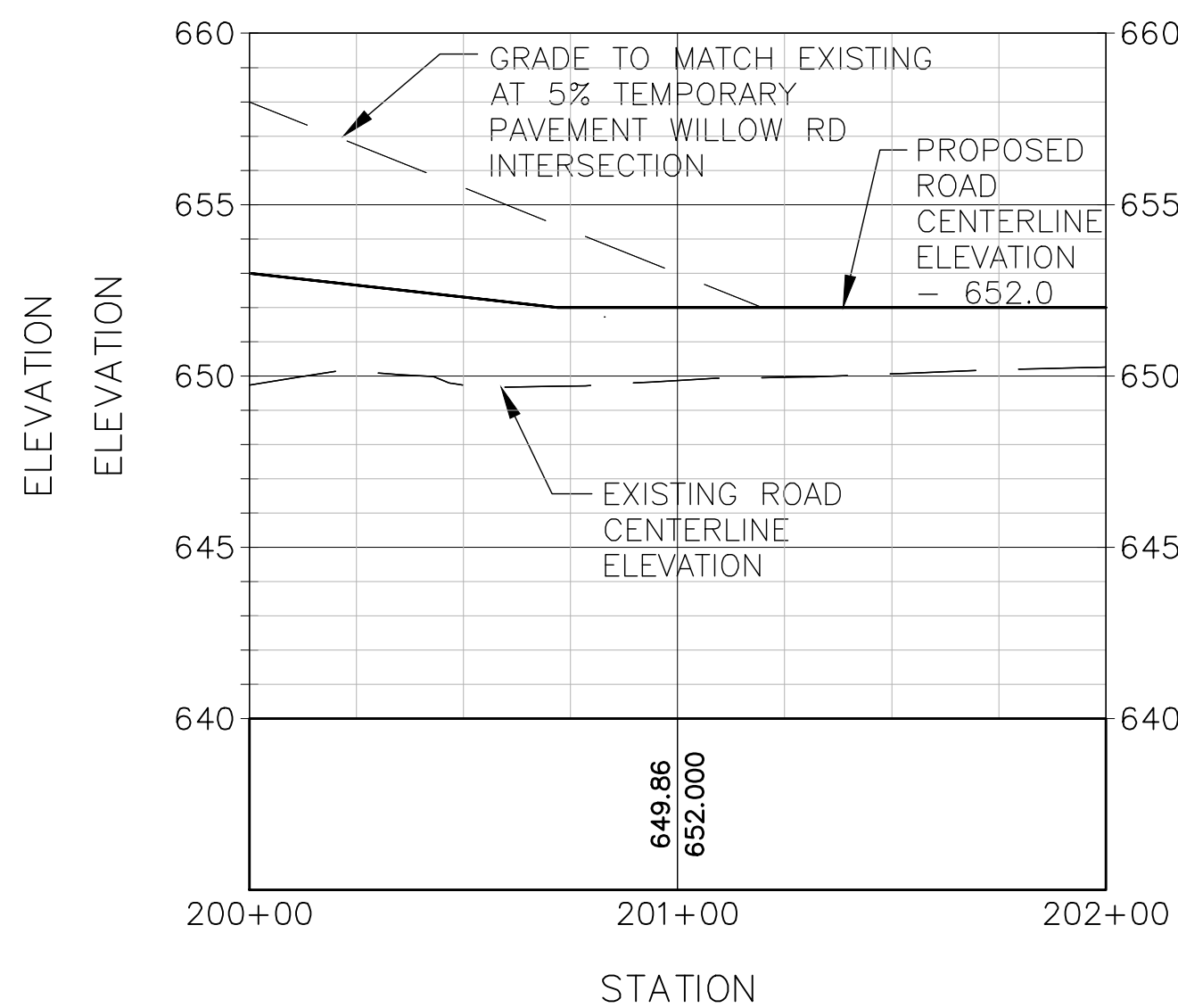
- ① ROAD CLOSED EMERGENCY VEHICLES ONLY
② NO LEFT TURN

NOTES:
1. SEE SHEET C-806 FOR TYPICAL DRIVEWAY/DITCH TREATMENT.
2. DEMOLISHED TREES REMOVED FROM DRAWINGS (SEE DEMOLITION SHEETS).

Hillside Avenue Profile



Hillcrest Drive Profile



Seal

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

Rev.	Description	Appr.	Date

Designed by:	Checked by:
DH	DH
Drawn by:	Reviewed by:
BFL	RH
Date:	Scale:
DEC 2015	AS SHOWN



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CONTRACT 14-371-5C
WILLOW ROAD FLOOD CONTROL PROJECT

WILLOW RD ROADWAY TEMPORARY FILL AND PAVEMENT, PLAN AND PROFILE

Sheet Number:
C-901
Page Number: XX